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THE Airman

JULY 1959

OFFICIAL JOURNAL OF THE AIR FORCE

FREE WORLD'S COMPETITION WITH COMMUNISM – page 2.

STEPPINGSTONES TO AEROSPACE

See Down USAF'S Memory Lane--page 16.

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VOL. III, NO. 7 JULY 1959

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LETTERS TO THE EDITOR

PROMOTION PLAN

Sir: *I think you'll agree that one of the most persistent problems in USAF today is that of frozen career fields and limited promotions. I would like to suggest that planners adopt a system similar to that used in the Navy and, in addition, eliminate the skill level AFSC entirely. This would provide an equal chance for everyone in the Air Force to demonstrate his skill in USAF-wide competition and promotion of the best qualified within quota limitations.*

TSgt. Leonard Daugherty
Westover AFB, Mass.

Officials in the Career Development Division have reviewed your suggestion and indicate that there are several undesirable features in the limited information contained in the letter. For example, it appears to make the written examination score the sole determining factor in the achievement of promotion. The present system calls for a demonstration of proficiency and recommendation by the supervisor or commander as well. Promotions are based on requirements, and the exact number of grades authorized is prescribed by the Department of Defense and budgetary limitations. "Freezes" result from reductions in overall authorizations, conversions of military to civilian spaces, and shifts of authorizations from one skill to another. Continued promotions where valid requirements do not exist would be an exaggerated form of bad management. By the same criteria, considerable importance is placed on skill level requirements and their role in the promotion picture. Again, this upgrading can be accomplished only after testing, recommendation, and demonstrations of proficency, and is an important step in proving the airman qualified for promotion. At present, it is not contemplated that there will be any major changes in the methods of classifying, selecting, and promoting airmen.

★ ★ ★

MOH MISSION

Sir: *I was happy to see Sergeant Bamford's excellent article on the Pease Medal of Honor mission in the March issue of* THE AIRMAN. *As copilot on the number three aircraft of the lead element on the mission, I found the*

Continued on page 40

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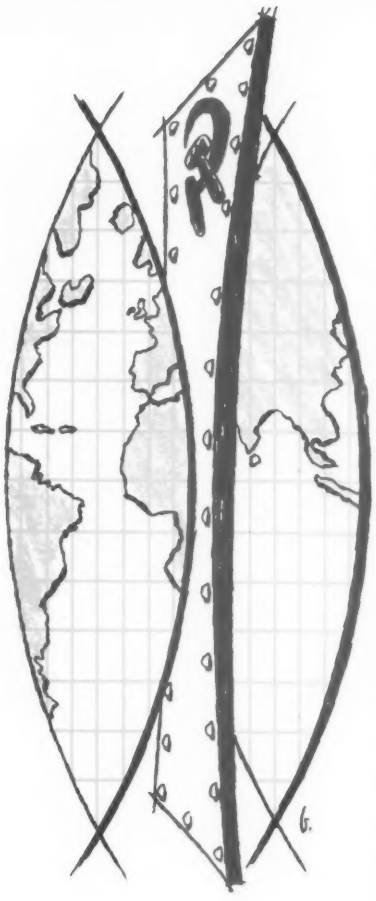
Use of funds for printing this publication approved by the Secretary of the Air Force and the Director of the Bureau of the Budget July 5, 1956.

An Address at Bureau of Advertising Dinner, April 23, 1959.

FREE WORLD'S COMPETITION WITH COMMUNISM



by
The Honorable Neil H. McElroy
Secretary of Defense

THE last time a Secretary of Defense was given the opportunity to address this distinguished group was in 1948—just eleven years ago—when Mr. Forrestal reported to you on the state of the Nation's defenses.

That year, 1948, was a year of great and historic change in the military and the foreign policies of this Nation. Just to illustrate how momentous these changes were, I might remind you that on one day in June 1948—the Senate of the United States passed the first peacetime draft law in the history of our Nation and *on the very next day,* by an overwhelming vote, approved the Vandenberg Resolution—a resolution that charted the course of Collective Security for the United States and the nations of the Free World—a course we have been following ever since. These were two days in which the stream of our history was diverted into new and untried channels.

The draft law of 1948, plus a supplemental military appropriation of over three billion dollars in the same year, represented our first concrete efforts to rebuild our military establishment from its postwar low.

The Vandenberg Resolution—in the foreign policy field—was an unprecedented departure from anything we had ever before attempted. Through this Resolution the Senate of the United States *advised* the President of certain steps *it* thought *he* should take in the field of foreign policy. You all know that President Truman took this advice—first by negotiating the North Atlantic Treaty. In succeeding years President

Truman—then President Eisenhower—established a whole series of mutual security arrangements—which today form the warp and woof of our national security policy. Undermine them or take them away and we would have to evolve a brand new defense strategy, *if* we were given the time.

You gentlemen who publish newspapers know better perhaps than any other group in America what caused us to take those momentous steps in 1948. You remember because you lived through those post-war days of frustration.

Earlier, you had written about the hope for the United Nations Charter and world peace through international resolve and agreement. Then as the years 1945, 1946 and 1947 unfolded, your papers were forced, in truth and objectivity, to publish a different story—a story of partial disillusionment—of shaken faith in a scarred United Nations, stranded on the rocks of the Soviet veto. Gradually it became painfully apparent to you and, through you, to the American people, that the Communists had no intention of abiding by the spirit of the Charter; that they were intent on nothing less than world domination; and finally, that we—the United States—were the main stumbling block in their path.

Like the practical people we are—we *reacted* to the all too apparent danger. Perhaps it was the brutal suppression of Czechoslovakia in February of 1948 that started us down the dual highway of rearmament and collective security we have been following ever since. Certainly this first forcible Communist conquest of a stable free government was a profound shock to our people. Again what they read in news accounts and your editorial pages shed an altogether new light on the power and complete ruthlessness of Communist aggression.

If Czechoslovakia wasn't enough to spell out the ultimate Communist aims—the beginnings of the Berlin Blockade in the following months of 1948 was the convincer. This was the first great probe into the moral and military backbone of the United States. Would we allow two million Berliners to starve? Would we turn them over to the Russians to be exploited? Or, would we take heroic measures?

You told the American people that story too—the story of the airlift—we flew supplies into beleaguered Berlin for month after month. We moved atomic bomb capable B-29 bombers to England. We *broke* the Berlin Blockade. But, more important, we demonstrated to the Russians and the whole world that we would not yield a rightful position to a threat of force. We had met our first great postwar test. It was only the first of many more to come in the years between then and now.

But in 1948, as you told this story, up and down the face of this peace-loving land—and told it as only a free objective press can—our people got the point. They always will when the facts are made clear to them—America's security was in danger. "Do something about it," they told their leaders. So their leaders did.

The Marshall Plan sped through Congress—so did the Draft Act and large supplemental appropriations for the Armed Forces. Finally—in the closing days of the Congress—the Senate passed the Vandenberg Resolution.

Survival *Is* Collective Security

These steps were not easy for America to take. The Senate Resolution was violently attacked on the floor of the Senate and in the editorial columns of some newspapers—as an absolute and utter abandonment of traditional American Foreign Policy. Opponents cried that it violated the counsel of George Washington and Thomas Jefferson to avoid permanent or entangling alliances. It undermined the United Nations. It would bring on a third World War.

Actually, the Collective Security policy of our government was approved by our people in the beginning because it made sense to them as a way to avoid a third World War. It makes just as good sense today.

I have gone into this bit of history between Mr. Forrestal's appearance before you and mine tonight—for the reason that I think a clear understanding of the events of his day are essential to a comprehension of today's policies. If the people know why the Nation had no option but to go forward with Collective Security in 1948, they will better understand why we cannot go backward in 1959 and beyond.

I believe it is important for all of us to re-examine—and then retell—the story of the beginnings of today's military and foreign policy. The plain fact of the matter is that the strategic concept of this country for survival *is* Collective Security. It is a concept on which the military posture of the Nation is based. The reasons which led to the adoption of this national policy of Collective Security in the forties—have not lost their urgency or their cogency in the fifties, nor will they in the *foreseeable* future.

Basically, the doctrine of Collective Security requires strength among our allies around the world. They have the manpower and they have the will to preserve their independence. What most of the Free World countries lack, is weapons to match the manpower and the will of their people. What we do, through our program of military assistance, is to provide such countries with appropriate weapons and with training in the use of those weapons.

The administration of the military assistance program has not been perfect, but it has been effective. The measure of its effectiveness will always be its deterrent effect on Communist advances into Free World territory—direct and indirect. The program was inaugurated, just ten years ago, to build up peaceful barriers to further conquest by Soviet Communism. I believe it has fulfilled that purpose admirably, in spite of occasional blunders of administration.

Repeated, bitter attacks on our foreign assistance programs leave in their wake a very large, never answered question—What is the alternate national security policy to be if the doctrine of collective self defense is abandoned?

The President's Committee to study the United States Military Assistance Program—otherwise known as the Draper Committee—has recently given an answer to that question. The only alternate they could see to our foreign assistance program—and they so reported to President Eisenhower—was to take *"our first stand in the last ditch."* The Draper Committee put it this way:

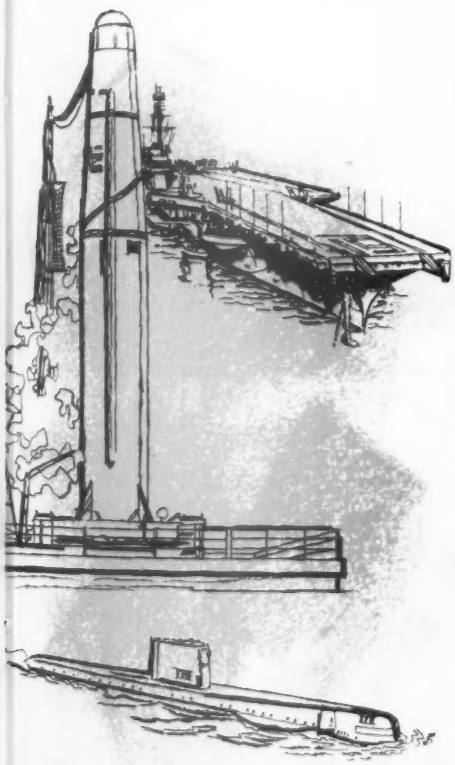
"The choice our country faces is very real and near at hand. In our fascination with our own mistakes, and the constant use of foreign aid as a whipping boy, we may be gradually choking this vital feature of our national security to death."

To this I can only add—with the full unanimous support of our Joint Chiefs of Staff—when we choke the military assistance program we have a strangle hold on our own military policy. That program is as much in our national self interest as the weapons in the hands of our own forces. Both are absolutely essential to our own protection.

Weapon Systems

Now let's take a hard look at our own defenses—our own weapon systems, never forgetting that they are integrated into the system of Collective Security I have just discussed.

Any nation which builds its defense position soundly does so on the basis of its special advantages. That is exactly what America has proceeded to do over the years. We believe, considering our geographical position, our allies and our military know how—that the weapon



systems we have evolved offer the best possible combination to keep anyone from attacking us.

Our planned programs for the future are responsive to all the variables in the formula which best defines America's security needs. They will respond to future intelligence of Soviet capabilities, to technological breakthroughs—which we constantly seek—and to the changing strengths of our Collective Security arrangements.

America has today the strongest air striking force in the world. This force is composed of the largest heavy bomber force in existence as well as the largest medium bomber force. These forces are backed up by mobile carrier-based attack aircraft and tactical fighter-bombers stationed in many strategic places around the world.

You may be sure that these bomber forces—all four of them—will be kept in any status of alert required to insure their ability to deliver unacceptable punishment to any nation which might attack us. They are peaceful barriers to aggression—peaceful but effective.

I feel before I leave the weapons business and get into other fields that affect the country's security I should make some comment on the so-called missile gap. There *may* develop within the next few years a disparity between the number of long-range intercontinental ballistic missiles in our stockpile and those in the Soviet Union's. I said *may develop* because *whether* a gap opens up depends in large measure on the willingness of the Kremlin to concentrate on the production of missiles to the full rated capacity of the Russian nation and its satellites.

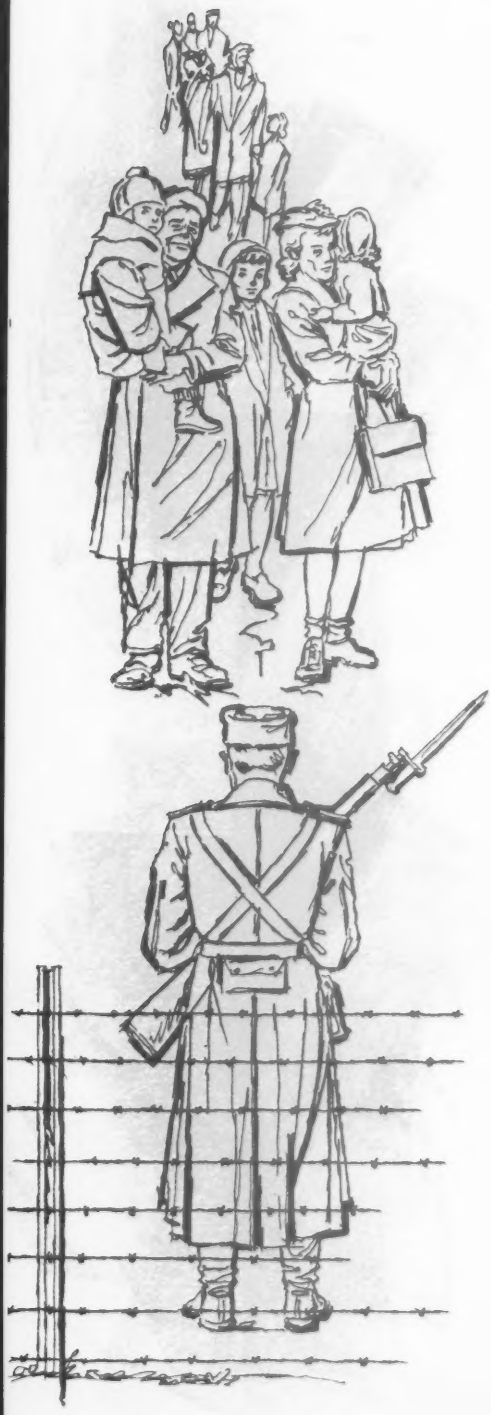
I believe it is wrong and the Joint Chiefs of Staff believe it is wrong to compare our heavy weapons delivery systems, category by category, and insist on being numerically greater in each. *Our* Armed Forces are built to fit *our* needs—presumably the Soviets' are selected to fit what they consider to be their needs. So long as the United States continues to have an over-all preponderance of capability to deliver high potency weapons—on target—we need not fear attack. We have such a preponderance now and no one in this administration—civilian or military—has any intention of allowing this condition to change.

The military strength of this or any nation is best measured by adding the sum total of its separate strengths into a composite whole. When this is done—our military leaders—and again I refer to the Joint Chiefs of Staff—conclude that our composite strength *is adequate,* and has no serious gaps.

This calendar year 1959 we expect to add to our powerful mixture of weapons delivery systems an initial Intercontinental Ballistic Missile capability—not a large capability numerically—but we believe approximately as large as what the Soviet Union will have in 1959. Our planned future deployment of ICBMs, as we are financing them in the 1960 budget, provides numbers which in concert with our other weapon systems—such as our massive aircraft strength and the *Polaris* system—we believe to be fully adequate to deter the outbreak of general war. The military program of this country is based solely on what is required for national security—it is not determined by budgetary considerations.

Next year a number of our atomic submarines will be carrying deadly *Polaris* missiles. Just *one* of these *Polaris* submarines on station, ready to fire, will have striking power hundreds of times more effective than the first and only atomic bombs dropped in combat.

The Soviets have made no claim to the development either of a nuclear powered submarine *or* a *Polaris*-type missile. They are fully aware of the military advantages and relative invulnerability of this weapon system. So, while it must be assumed that at some future time, the Soviet arsenal will include *Polaris*-type submarines, it seems clear that



the United States has a considerable lead in this highly important weapon system.

Other Spheres of Competition

Next year also, this country will add to its offensive armament powerful air-to-ground atomic missiles—which can be fired from our heavy bombers hundreds of miles outside target defense areas.

We confidently expect that our own military strength integrated with our Collective Security strategy will continue to be successful in discouraging Communist military attack on the Free World. But acceptance of the belief that the Communists will hesitate to use military conquest as a means to their objective of world domination does not mean they will have given up the objective. It only signifies that the Soviets may decide that the use of military conquest has become unprofitable. We may be sure that such possible abandonment of *one* means will only cause the Communists to concentrate their efforts on other avenues they believe will lead them to absolute world power.

Thus, the United States and the other nations of the Free World are bound to be projected into other spheres of competition. We must be alert to the dangers which may develop in the new areas. Let me name a few of these spheres. First and most important—the competition for the mind of man—all else is subsidiary to this battle—second, economic competiton—third, competition in the field of education.

In the competition for the mind of man the Free World has for export the best and most admired product in the history of mankind—freedom —freedom wrapped in all kinds of packages—packages so attractive that man has always jammed the world's market places wherever they could be possessed.

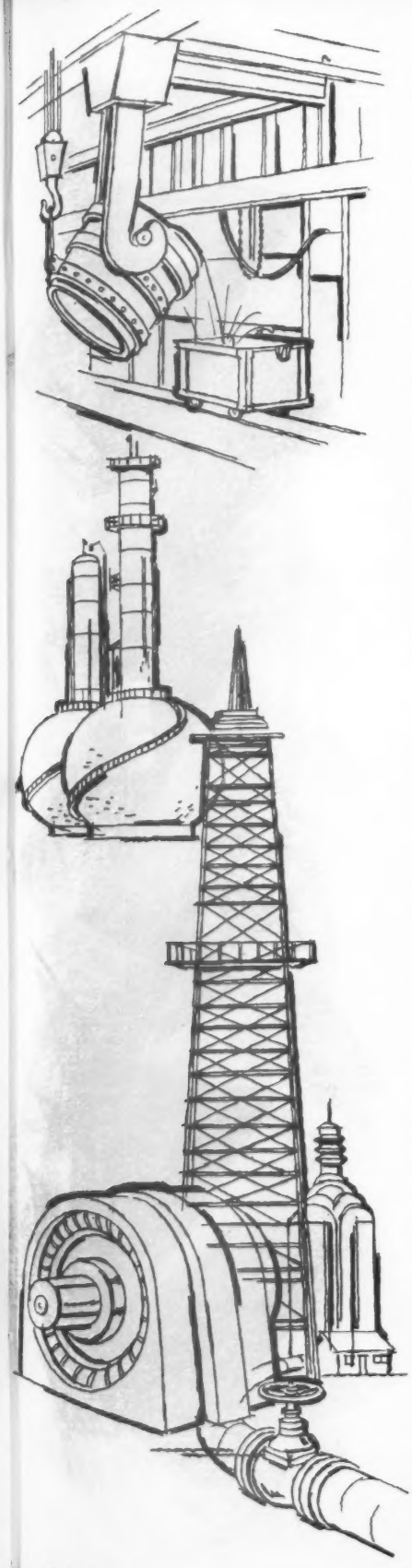
There is freedom of religion so ardently desired by the Buddhists of Tibet and the Moslems of the Middle East, not to mention millions of people behind the Iron Curtain—who have already lost this freedom to Communist Godlessness.

There is freedom of speech and of the press so respected by you and by me and so abhorrent to Communist countries where control of information media is indispensable to oppression. Freedom of the press and freedom of expression rocked all of Hungary in a few hours. It is something no Communist country can tolerate and survive. They let a hundred flowers bloom—in words of Mao Tse Tung—only so they can snip off the heads of the ninety-nine they won't want to mature into dangerous thought.

There are many lesser freedoms—all of which we have and consider essential to happiness—and all of which the history of the modern world tells us man aspires to possess. There is freedom to travel, freedom to live as one wishes and where one wishes, freedom to work as one pleases and at what one pleases and freedom to save and invest in ways which permit the individual to share in the growth of the country. All these freedoms are denied in the Communist world and will be denied to the people of any nation which comes under Communist domination.

The recent brutal aggression by Communist China against Tibet is a classic example of the utter worthlessness of Communist promises and agreements. The world remembers the words of Chou en Lai at the Bandung Conference—honeyed soothing words, cooing to all its neighbors that China stood—I believe "resolutely" is the Communist word—"for noninterference in the internal affairs of others."

The dramatic flight of the Dalai Lama in the face of a formal agreement to respect the religious beliefs and political system of Tibet should convince the rest of Communist China's neighbors of its true intentions. Those intentions do not differ from those of the Communist Party of



the Soviet Union. They were aptly put by Mr. Allen Dulles just a few days ago, when he stated:

"[Their] mission continues to be the subversion of the entire free world, starting of course with those countries which are the most vulnerable."

The problem we must solve is how to prevent those "most vulnerable" nations from being sucked into the maw of Communist promises, and thus lose their status as free nations. Somehow we must make the classic Communist pattern of penetration and subversion so obvious that it will be rejected summarily. Recent news dispatches and editorials from the Middle East and India indicate that Communist heavy handedness in the Berlin crisis, in Iraq and in Tibet is making its mark on the minds of uncommitted men. More of our resources and ingenuity must be devoted to delineating clearly these true images of the Communist technique and displaying them in the showcases of the world.

One of the dramatic demonstrations of popular decision between Communism and the Free World took place several months ago in Berlin where, as you well know, the Communist system exists in the very same city with a free government. In a city election where the lines were clearly drawn the Communist Party candidates of West Berlin received less than two percent of West Berliners' ballots. We expect and are confident that the world will make this same choice whenever free government and the Communist variety compete in the open market.

Hard Choices

Now, I would like to speak about some of the tough decisions which face the people of this country if we are to prevail in nonmilitary as well as military spheres of competition with the Communist system. I have, in the past, labeled these as "hard choices."

We have a system of government by laws—where as much freedom of choice is left to the individual as is consistent with those laws. No one tells our large corporations how much of their profits must be plowed back into industrial expansion nor what kind of product they shall make for X years into the future. Similarly, no one tells Johnny or Mary or their parents, what their education and their profession shall be.

The Communist system of government controls is the very antithesis of ours. It prescribes what will be made, how it will be made and what will be done with the finished product. Then it decides how much of what is produced will be used for the direct benefit of the people—and how much will be used for military purposes or reinvested in expansion of the means of production. It likewise subordinates the wishes of the individual in its system of education—a system where quotas are established in each category deemed by the state as essential—and all facilities and resources—including human resources—are mobilized to meet the estimated needs.

Since we are in competition with a country which operates by a totally different set of rules, it may be necessary for us to tighten our belts and step up our national effort. Thus, in our long-range competition with the Soviet Union in the economic and educational fields we may be faced with some difficult decisions.

In the economic field, for instance, the Soviet Union, for all its failure to meet announced goals, has made tremendous strides in developing its economy. Its total output is still less than half of ours but by diverting dictated percentages into designated channels they manage to stay on a par with us in some fields and perhaps even go ahead of us in others. For one example, the Soviet Union devotes twice as great a percentage of its gross national product to military ends as the United States for

about the same total military expenditure as ours. They, similarly, devote nearly twice as great a percentage of their total output to industrial expansion as this country. All of these things they can do because the State wills that the people must do without the consumer goods their people want—and our people have in abundance.

The Soviet Union has recently announced a new seven-year plan and boasts that by 1970 or sooner she will advance to first place in both volume of production and per capita production. Our intelligence discounts this claim as propaganda but the discount is not so deep as to encourage complacency on our part. Indeed, we anticipate enough economic progress by the Soviets to predict probable necessity for change in some of our economic thinking and practices.

Mr. Allen Dulles estimates that the Soviet Union *could,* as a result of increased productivity over the next seven years, increase her present military spending by fifty percent. This is an area where the Soviet Union's effort must be matched or bettered. It is, therefore, one of those areas which may force us to make some hard choices. We either have to boost our own gross national product so that whatever increase may be required in military spending will not disturb other areas of our economy or we have to cut down on expenditures in those other areas to compensate for the increased military budget.

Get Along with Less

The Soviet Union may also channel a large percentage of her increased resources over the next few years to expand her "trade and aid" policies with those vulnerable but uncommitted nations of the world. This course, too, may mean changes in emphasis in our own economy and sacrifices for our people.

We can no more afford to lose the economic competition with Communism than we can afford to fall behind militarily. One of the major influences in attracting the mind of man to one system of government as opposed to another is demonstrated success in economic growth. Today the United States is the acknowledged leader. To maintain that position of leadership we may have to divert more of our output into upholding our worldwide responsibilities and less into what our people would like to have.

The only way I know to meet Soviet economic competition is to increase our own output. This may mean plowing back a larger percentage of our gross national product into capital investment for industrial expansion—the kind of expansion which will provide facilities for greater production of all types of goods including, if need be, more military hardware. It may mean that our people will have to learn to get along with less in current consumption. Otherwise, we may come out second best in a competition for which there is no second prize.

I believe our economic system—like our social system—is the greatest in the world. We must keep both systems so healthy that no country to which a freedom of choice is still open would think of choosing the Communist way.

In the field of educational competition we likewise must surge forward. Not only must we keep pace with the rising demands of technology—but we must train more and better leaders in all fields of human activity—publishers, military, business, labor, teachers, politicians, diplomats, and many others. We must contrive to do this, within the basic framework of the freedom we prize so highly. This can be accomplished only by a truly massive national effort to encourage, help and persuade our youth along educational lines which will marshal the Nation's intellectual resources.

We must devise means to reduce mental wastage to a minimum. This

means identifying our talented youngsters early. But identifying them and their special talents is only a small part of the problem. They must then be encouraged and stimulated to continue their education in the fields for which they are best fitted. Parents, teachers and community leaders must join in the effort to influence youth toward right decisions in the field of education.

Education

Youngsters need guidance and intelligent persuasion. Both must come from knowledgeable and interested adults. It follows that a need exists to educate adults not only in what the Communists are truly after but in how their aims, objectives and practices require certain special and continuing efforts in our own educational system. I know a great many of you publishers have taken the lead in fostering adult education along the lines I have suggested. This is a continuing task which requires community and individual leadership of the highest order. Those who understand the threat we face must communicate that understanding to all who touch the lives of our children and to the children themselves.

The fact that we operate in this country on the principle of freedom of choice doesn't mean that we can't do something about guiding our young minds into channels which will increase our productivity and our capacity to give true leadership—intellectual and cultural as well as economic and military—to the Free World.

We have certain known, well defined gaps in our educational system—such as weaknesses in science, mathematics and language instruction. Our educational leaders and responsible members of our communities are hard at work defining the extent of our educational gaps and how they may be bridged. Already they have concluded we will need better teachers and more of them *and* that we will have to pay them more. This will mean more taxes for our people—an unpleasant but, in my judgment, a necessary price to pay for the development of our most valuable resource. Another "hard choice."

I know it is clear to all those here present that America does face a struggle for survival. In facing this fact we should occasionally remind ourselves that we have tremendous advantages over those who have announced that they will bury us.

We have stronger defense forces and we intend to keep this posture.

We have strong and loyal allies. We can and must keep those allies strong with whatever military and economic assistance is required.

We have a strong, healthy, efficient economy—the economic growth of Soviet Russia raises questions for us as to how we may best use the output of our economy in order to serve our own people and the Free World.

We have a system of education which has made our country great—has offered opportunity unlimited for individuals with the right kind of guidance and the right kind of inner drive. Some gaps have developed—in curriculum weakness, in neglect of the teaching profession and in lack of pupil motivation. These gaps are inconsistent wtih the requirements placed on us by our position of world leadership. They must be closed.

We have freedom—all the freedoms in the spectrum—freedoms without which the spirit of man withers and dies. Here above all is the source of our strength—the shine of our example for the rest of the world.

We seek only to preserve those freedoms—for ourselves, and for others who aspire to live and worship outside the suffocating, Godless, Communist system. With these advantages and a sense of dedication to their preservation there is no struggle we cannot win.

AVIATION'S AMAZON

Experiment in Air Logistics

by Roy Paris

You might call her a freak. She was fat and clumsy, and her nose was too long—as long as a railroad coach. But she had personality, and those who knew her loved her.

Oh, it was said she drank too much (she could hold 21,116 gallons), and made too much noise (a California farmer sued her for scaring 350 prize Leghorns). But people will resent someone who is different, and in all the world there was never another like the XC-99.

When the men at Consolidated-Vultee drew her plans, based on their proposed B-36 bomber, they hoped she would mother a large flock. To some military men, the Dunkirk evacuation had suggested an aircraft capable of carrying 100,000-pound payloads, and airline executives gazed greedily into the future and saw gigantic liners carrying 400 passengers nonstop across the country at bus fares.

But customers were hesitant. A plane of such proportions was unheard of; the wing would be 77 yards long and each of the six engines would require 190 gallons of oil. The verticle fin would rise to the height of a five-story building and in the double-decked fuselage would be the floor area of three boxcars.

In 1942 the government cautiously ordered one, for test purposes. Airfreighting 50 tons at a time was a new concept and needed study. Pan American Airways followed with an option on three others for use on its California-Hawaii run, until somebody realized the three planes could carry 150 percent of all traffic generated on that route by all means of transportation. They dropped the option, a move hinting darkly at troubles to come.

Consolidated-Vultee, busy building *Liberators,* had little time for the great freighter and she was not completed until after the war. The mammoth fuselage was built at San Diego and mated with a B-36 wing sent from Fort Worth. On November 24, 1947, she flew for the first time, and after 18 months of testing she joined the Air Force family in May 1949.

Her first home was Fort Worth, where she established her fame with "Operation Elephant." Carrying 10 B-36 engines and 16 propellers, the XC-99 left the runway

with a payload of more than 100,000 pounds, the first time it had ever been done. Thus began a long series of flights which shattered every international weight-lifting record by wide margins.

In September, 1950, she "got her orders" and proceeded to Kelly AFB, San Antonio, with a team of Air Force and Convair engineers. There she was assigned to the San Antonio Air Materiel Area (SAAMA) as a project aircraft. An operational test program was begun the following month to fully determine her capacity for moving heavy loads long distances at a reasonable cost. Largely on the XC-99's performance in operation would rest the decision to move into an area of enormous "super-freighters" and airliners, or to remain with fairly large aircraft produced in greater quantity.

Cargo for Korea

At the time the program started, the Korean conflict was making an enormous logistic demand for movement of supplies to West Coast ports, and within days the XC-99 began her contribution. On October 10 she amazed airfreight men by hauling 42 badly needed C-54 engines to McChord AFB, Wash., in one nonstop flight from Kelly. She carried 27 of them on her lower deck and 15 on the upper. On arrival, she was taxied down a perimeter landing strip with only one foot clearance on each side and then backed into the loading area by her reversible propellers.

Flights such as this brought to light the problems she was built to find, and answer. It was recognized soon after the program began, for instance, that changes in loading techniques would have to be made. Placing 60,000 to 100,000 pounds of cargo into the fuselage had proved a long and exacting task, and required an excessive amount of time.

To remedy this and other problems, she underwent an extensive modification in 1951. Another cargo door was added, and four self-contained hoists, each capable of lifting 10,000 pounds, were installed. She received more powerful engines and her landing gear was altered so that she could land on any airfield which would support a C-54.

Returning to the test program, she was in continuous operation from July, 1951, to May, 1952. She was put on a schedule and flown to the West Coast twice each week. She flew 600 hours and airlifted seven million pounds of equipment, nearly half of which was in support of the Korean effort.

Her crew included two scanners, two loadmasters, and two engineers. The scanners kept an eye on the flaps, landing gear, and engines, since these were not visible from the pilots' compartment. The loadmasters directed the distribution of weight and remained with the plane throughout each flight. The engineers were described by a former commander of the XC-99 as "by far the most important men on the plane." They monitored a maze of instruments to keep the six 28-cylinder engines humming smoothly.

No aircrew ever had so much room. There were 11 bunks, two hot plates, an electric oven, an ice box, a dining table and chairs, a food storage compartment, and a roomette-size compartment for the aircraft commander's relaxation.

Capt. James C. Pittard, who logged 3,827 hours in the XC-99, described her as quieter and more comfortable than any other plane he had flown. Maj. James Douglas, another commander, was less enthusiastic:

"I've flown a lot of planes and I can say definitely that the XC-99 handled differently than any other aircraft. It was more like a B-24 than anything else. It responded slowly; you had to stay out in front of it at all times. I don't mean to say you had to be some special kind of pilot to fly it, but you had to understand it. It never let you forget that you had 50 tons of cargo behind you."

Every flight of the XC-99 took a lot of planning; even the temperature had to be considered. Cool air gives more lift, and more than once a trip had to be postponed when a Texas summer refused to cooperate with the weatherman.

In the Limelight

The sight of the tremendous aircraft over their city at first awed the citizens of San Antonio, but with regular flights she became a fixture, and a source of civic pride. Housewives, alerted by the peculiar drone of her engines, glanced over clotheslines at the behemoth and remarked matter-of-factly, "there goes the XC-99."

Not so in less frequented areas. When she visited an airport for the first time activity came to a standstill. At Rhein Main, Germany, in 1953, roads were blocked on all sides of the airfield as thousands of Germans came to stare, bearing blankets and picnic lunches.

Because of her unique capacity, the XC-99 was occasionally called upon for special jobs. On Project Dew Line, in May, 1955, she carried 380,000 pounds

of cargo 2,500 miles, from Delaware to Keflavik, Iceland, in six roundtrips. This amounted to 30,000 miles of flight under extreme weather conditions and a record 201 hours in the air in 30 days.

Once she was hired by MGM to fly a bellyfull of antique biplanes from Florida to California for the filming of "Wings of Eagles." On this trip, she finally found herself second-fiddled. Arriving at Los Angeles, she was greeted by a noisy crowd, largely feminine. The crew's pleasure was shattered, though, when the ladies demanded actor John Wayne, whom they believed to be aboard.

The XC-99 flew more hours than any other experimental aircraft before the Air Force realized you couldn't fill her up. She could fly more cargo further and cheaper than any other plane in history, but her very capacity frustrated all efforts to find spots for production models. She hauled cargo for 16 cents per ton-mile, compared to 26 cents per ton-mile for a contemporary military cargo-carrying aircraft, but for a trip to be a financial success, she had to carry a vast cargo from Kelly to her destination and then find at least 60,000 pounds waiting for the return trip. There simply was no cargo route which could provide that much business.

Her flights were cancelled in March, 1957. At that time SAAMA maintenance estimated that 144,734 direct man-hours and more than one million dollars would be required to replace structural sections which had reached limitation by the patch and reinforcement method, and to accomplish essential modification, technical order compliance, and general repair for her return to service.

Into Limbo

The XC-99 was grounded, and thereafter she died. She made her contribution, though. She proved that a large plane could be operated economically if a long-distance cargo route could be established which would guarantee 60 to 80 thousand pounds of cargo at each end of the run. She taught a great deal about loading methods and equipment. Technologically, she demonstrated that there was no practical limit to the size an airplane could be built and still fly, but even her builders expressed the belief that no more aircraft of this magnitude would be built; "it represented too many eggs in one basket."

When SAAMA announced her retirement, former crewmen, Air Force historians, and San Antonians together protested a scrapping. While proposals for preservation were made, her carcass rested in a dull corner of Kelly Feld.

Serious consideration was given to flying her to Dayton for placing in the Air Force museum, but the idea was abandoned because of the expense of putting her in flyable condition for the one flight. Also, no building at Dayton could house her.

Another idea was to place her in a downtown San Antonio department store parking lot (which the store eagerly offered) and establish the chamber of commerce offices within her fuselage. This plan caused a stir until somebody on the city counsel suggested that dismantling the city to get her downtown might be prohibitively expensive.

Then the mayor of San Antonio proposed that the city raise funds to repair her sufficiently for a 10-mile flight across town to the International Airport, where she would become a tourist attraction. The city council liked the idea until it was found to be illegal for the Air Force to donate anything to a city or an individual. San Antonio wanted the plane, though, and found a way to get it. The Texas Department of the Disabled American Veterans was asked by the city to request the aircraft from the Air Force.

This was done, and in ceremonies on November 6, 1957, the DAV received title to the XC-99. It was to be used only for display, ceremonial, and historical purposes; the Air Force specified that it not be used as a profitmaking venture.

Suddenly this plan, too, fell through. The DAV had the airplane but the city of San Antonio was unable to help with the money.

Now the DAV found itself with an 82-ton, 232-foot-wide gift and instructions from the Air Force to have it removed from Kelly Air Force Base within 90 days, at no expense to the government. Instead of backing down and dooming the old bird to the scrapyard, though, the Texas Department of the DAV, under its director, Lewis D. Buckingham, shouldered the load. With the benefit of several Air Force extensions on the time limit, the DAV now has moved the great plane to a spot just off the main runway at Kelly, and it soon will be possible for the interested to walk through the aircraft; to look up into the towering aluminum superstructure of the vertical fin, and out to the distant wingtips, and someday say to their children: "They don't build 'em like that anymore."

It seems fitting that the old bird should come to rest permanently in the city where she was most admired.

SLANTS ON SPACE

keep your eye on the ion

Ion propulsion may be ready for a space debut far sooner than expected and its success will be judged by a seemingly insignificant performance.

A small experimental engine is now under test in a private laboratory and the reported results have scientists optimistic that a pilot model can be put through actual space trials as early as 1961.

The engine would be integrated into a satellite's system for the sole purpose of making tiny corrections in the vehicle's attitude or position.

Once this capability is demonstrated, experts believe the way would be clear for development within a few years of advanced ion engines which would provide man with certain controls over space devices—a major objective in current research programs.

For anyone new to the subject, an ion is an electrically charged particle set in motion. The term itself means "going" in the ancient Greek from which science adopted it.

Another thing to be made plain at the outset is that the theoretical usefulness of ion propulsion begins *only* when a vehicle gets spaceborne.

In the laboratory test engine, the ion thrust is developed by a stream of such particles emitted at high velocity through an exit slot, the equivalent of the nozzle in the base of existing rocket systems.

It is now estimated that the model has the capability of attaining a thrust potential which would be sufficient under operational conditions to tilt a satellite slightly forward or backward, or to produce minor changes in its axis. The thrust would be too weak, however, to alter a vehicle's trajectory.

If tiny corrections seem an unimpressive basis for establishing the validity of a concept, it may be well to remember that the few seconds the first Wright plane stayed airborne at Kitty Hawk and the footage it traveled were on the meager side, too.

Given reasonable success with small ion propelled devices, scientists see a second generation of the engine, with more power and sophistication, coming along to start delivering the goods in the way of more ambitious corrections of a vehicle's attitude and providing a certain degree of "control" over trajectory.

"Control" in space has a limited meaning since any artificial device is subject to the same physical laws governing the motions of the natural celestial bodies. Generally speaking, "control" would mean changing from one orbital path to another, or directing a vehicle's orientation with reference to the Earth, the Moon, or any other member of the solar system.

The ability to maintain or adjust a vehicle's orientation would be valuable, for example, with a photographic satellite. Its camera could be pointed earthward, or trained on celestial objects undergoing scientific investigation.

As for orbital changes, control would make possible the gradual return of instrumented cones from satellites which have outlived their usefulness, but whose tape recorder "memory" apparatus should not be allowed to fall into unfriendly hands.

The key elements in the experimental engine are tungsten and cesium. The latter is a rare, silvery metal never found free in nature but always in chemical compounds. Of the three largest sources of cesium supply known, the U. S. has two, in Maine and South Dakota. The third is in Elba, the island on which Napoleon spent his first exile.

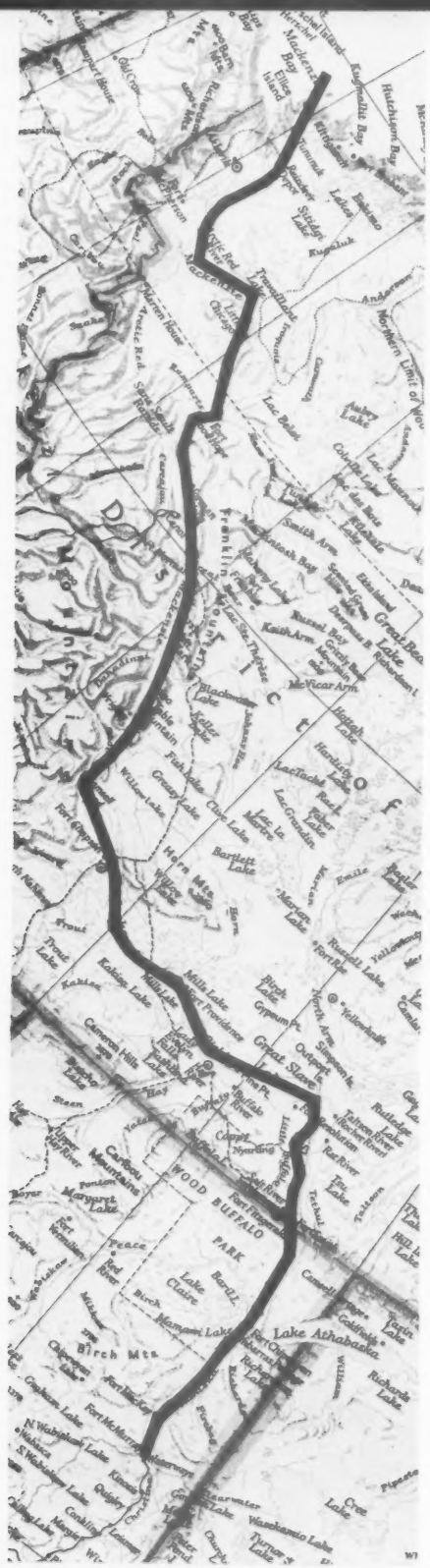
When the engine operates, the cesium is first vaporized in a boiler and then passed through a plate of heated, porous tungsten. During this process the cesium vapor is ionized or, to put it another way, cesium atoms become positively charged particles through the loss of electrons which adhere to the tungsten. The ions thus produced are caught by an electric field which accelerates them and directs the particles at high velocity through the thrust vent.

The infinitesimal mass of these particles explains why they would provide too feeble a thrust to overcome the strong gravitational pull and atmospheric resistance between launch pad and space environment. Once in space, however, resistance factors are virtually nil.

Thrust velocity determines the fuel load requirements for a space mission. The higher the velocity, the less the fuel consumption and hence the smaller propellant supply needed. Ions can be accelerated to provide far higher thrust velocity in space than chemical propellants per pound of fuel.

Pioneer ion engines, as contemplated, would employ relatively low acceleration and thrusts applied in small increments over extended periods. Theoretically, at least, the weight economy they promise in fuel seems to give them an edge over chemical components to serve the same purpose. (See page 24.)

—WILLIAM A. KINNEY



Supplies for the central Dew line follow the route marked from Waterways to the Arctic Ocean.

USAF'S NORTHWEST PASSAGE

IF OLD Alex Mackenzie, the rugged Scotsman who in 1789 discovered the Canadian river which bears his name, could see the big things going on there now, he probably would be pretty proud of his namesake.

For the United States and Canadian governments are putting his discovery to good use. Fact is, they're following in his exact footsteps and using the Mackenzie for exactly the same purpose, transportation—but on a much bigger scale.

Crux of the importance lies in the millions of pounds of supplies that must be moved each year to Dew line radar outposts in the Arctic. Those in the western section pose no major problem since they can be resupplied through established Alaskan routes. In the eastern Baffin Island area the St. Lawrence River from Montreal and the Atlantic Ocean provide a route for large ships which later discharge their cargoes into landing barges. Until last summer and Project Mack-River the resupply of central Dew line sites was a huge and costly task.

In an effort to avoid the long and often uncertain route through the Bering Sea and around Alaska, the Air Force, at the suggestion of the Canadian government and working hand-in-glove with a Canadian firm, Northern Transportation Company, pioneered a resupply route through the heart of the Canadian Northwest.

Waterways, located on the Athabasca River, is the northern terminus of the Northern Alberta Railroad, which runs from Edmonton, 250 miles south of the railhead. The population of Waterways varies from about 1,000 in winter to 1,800 during the short summer in this far north country.

Materiel from all over the U. S. and Canada goes by rail to Waterways where it is loaded on huge barges, then pushed by tugs down the Athabasca River into Lake Athabasca. From here the barges enter Slave River which runs into Great Slave Lake, even farther north.

TSgt. John N. Di Giacomo, left, and Maj. Paul D. Box, Jr., pose in front of their "office" at Waterways.

The first job of the Northern Transportation Company, as soon as the ice goes out of the Athabasca, is to get tugs and barges into the water and readied for their summer work. Bulldozers push tugs on skids down the river bank.

A short run down the Slave River brings the barges to a series of rapids which cannot be navigated. Here, oil drums, crates, and all the rest are loaded onto trucks, portaged around the rapids, then reloaded onto other barges for the trip to Great Slave Lake.

Leaving Slave Lake the barge "trains" enter the Mackenzie, Canada's largest river (in places two to three miles wide), on their final lap to Tuktoyaktuk, on the shores of the Arctic Ocean. Stops are sometimes made at Normal Wells where petroleum products, brought overland from Alaska, are picked up. The trip covers some 1,400 miles and takes from three to four weeks.

With the short summers this far north, materiel is shipped from Waterways only during April and May. Waterways itself is open longer than this. But supplies shipped down the Mackenzie must arrive at the Arctic Ocean early enough so that LSTs (Navy lingo for landing ship tank) can load supplies and deliver them to radar sites before cold weather starts and freezes them in for the winter.

Ice is also a problem at Waterways. Both the Athabasca and Mackenzie Rivers freeze so solid that tugs and barges are removed from the water and hauled up on the river bank during winter months.

During 1958 4,000 tons of Dew line materiel were barged up the Mackenzie to the Arctic Ocean.

Although Waterways is only one-and-a-half hours by air from Edmonton, it is 14 or more hours by rail, depending on weather conditions. There are no roads to the outside.

Road mileage in the Waterways area totals about five; and this consists mainly of a gravel road between Waterways and McMurray, a short way down river.

Not only was this the first time an operation of this sort had been undertaken by the Air Force, but it was also the first Arctic experience for two SMAMA men who oversaw the project.

Heading up the two-man work force was Maj. Paul D. Box, Jr. He was aided by TSgt. John N. Di Giacomo, transportation specialist, and for three weeks by A/2C Leroy Monroe, administrative specialist.

Most of the town's populace are of Indian blood. Many of the place names are tongue twisters. "Tuktoyaktuk, an Eskimo word meaning 'By the Great Sun Water' was so difficult," recalls Major Box, "that it is usually called 'Tuk-Tuk.' But apparently 'Tuk-Tuk' means something entirely different. The Eskimos always laughed when we called it that, but they never would tell us what it meant."

Temperatures are not too bad in the Waterways area. A hot summer day may reach 80 degrees, and coldest in winter around 40 below. Neither of the two extremes were experienced by the SMAMA crew, however.

With memories still fresh of the terrific job done during the Berlin airlift a few years ago, the question arises: why isn't this materiel flown in?

Major Box explains it by giving two good reasons. First, the Air Force needs its large aircraft for more immediately pressing jobs elsewhere. Also, as there is no terrific rush (this is a resupply operation), moving the supplies by water saves the taxpayer thousands of dollars a year.

Electronic equipment, and perishable goods such as fresh food, BX supplies and the like, are flown in, however. Mail also goes in by air.

In 1959, without fuss or fanfare, waterway commercial transportation companies will move all supplies to Canadian Dew line sites using the new inland passageway to reach central outposts.

Alexander Mackenzie was a partner in the North West Company which dared to compete in the late 1700s with the powerful Hudson Bay Company for the lucrative Canadian fur trade. Mackenzie, while searching for a waterway to the Pacific Ocean, discovered the Mackenzie River and followed it to the Arctic Ocean. He was the first white man to cross the North American continent.

In the span of slightly over a half-century, aviation progress has reduced the world to a single community. A glimpse of Air Force contributions to this shrinking process is readily available . . .

DOWN USAF'S MEMORY LANE

by SMSgt. Hal Bamford

BECAUSE of increasing public demand, officials at the Air Force Museum, Wright-Patterson AFB, Ohio, recently announced that the doors to their building will remain open every day of the year except Christmas.

Though the museum is now several years old and in its third version, the announcement is only another indication of the growing awareness of the interest and tradition centered in thousands of historical displays, aircraft, and equipment housed at the Ohio base.

Tradition is as much a part of military life as the uniform. Without it, *esprit de corps* would be virtually nonexistent. Consequently, when the United States Air Force became an autonomous part of the Nation's military establishment, the new service's officials were faced with the problem of starting from scratch in establishing a native tradition.

Past history of aerial accomplishments bore a direct-line relationship to units which had been part of the Army. At Wright Field, literally thousands of items of crated material were available from former Army museums, the last of which had been temporarily closed in 1940.

Post-war advancements, revived aviation interest, and the need for a new version of the museum offered excellent reasons for resurrecting the stored material, renovating some of the World War II equipment, collecting examples from the new era, placing it all under one roof, and opening it to the military and the public.

Actually, the checkered history of the Air Force Museum goes back more than a quarter-century. First official efforts were climaxed in 1923 with the opening of a small building at McCook Field, the original name of the present Wright-Patterson, which housed many aerial reminders of World War I, including a number of restored enemy aircraft.

For nine years the museum struggled along, seldom changing or visited by more than a handful, a minor monument to America's aerial efforts in Europe and to the years that preceded the first aerial war. With the crash in 1929, money became a prime factor in all phases of American life and any economy was a welcome one. The museum was among the first items to fall victim to military retrenchments.

Three years passed before another effort was made to revive the idea. With public works programs underway, a special building was erected at Wright Field, and the second effort at establishing a permanent museum was inaugurated.

This time the result was a more ordered monument, complete with glass cases to house many of the earliest items, and including many of the developments which had followed World War I, in addition to most of the aircraft and objects from the earlier effort.

However, with the outbreak of World War II in Europe in late 1939, America was suddenly catapulted into the role of Arsenal of Democracy and history was again forced to wait. Throughout the Nation, war industries, air bases, and other military installations began to expand and efforts which were not relevant to this all-out growth were abandoned. Among them was the second version of the Air Force Museum.

As noted, it was after the close of World War II that interest in reestablishment of the museum was again aroused. Early success of the Orientation Group idea contributed to the belief that a static museum to supplement the rolling displays was a necessity. (See, *Schoolhouse on the Move,* June '59.)

Officially, the present version was not opened until 1954 but, in reality, they moved into the present quarters in Building 89, Area C, in the late 40s and operated from there on a makeshift basis.

Top spot for "sightseers" at Wright-Patterson AFB, Ohio, is the justly famed Air Force Museum and the adjacent display of historical aircraft.

Within the next few months, the present museum will undergo a complete renovation although it will remain in its present quarters. The primary approach of the new design will be chronological, centered around seven specific periods. In all, the museum will include nine themes with a Hall of Honor and an Art Gallery in addition to the seven chronological departments.

First of the seven period areas will be based on the Era of the Wright brothers, encompassing the period between 1903 and 1909. Following in order will be Warriors with Wings, 1917-1918, the story of World War I; Pioneers of Air Power, 1919-1927; Patience and Progress, 1927-1939; Dawn of the Atomic Age, 1939-1946; Berlin and Korea, 1946-1953; and Dawn of the Space Age, 1953 till the present.

Material and aircraft from these eras will be included in each of the sections. Additionally, the lighting, artwork, and copy material will be designed in such a manner as to suggest the state of advancement of the times. Backgrounds will be as artistically and scientifically authentic as it is possible to make them.

The two remaining themes will revolve around specific ideas. The Hall of Honor, for example, will be dedicated solely to Medal of Honor recipients and will include paintings and background information on the 47 Air Force men who have received this Nation's highest award. Information on their accomplishments will supplement the personal material.

The Art Gallery will feature both native American art woven around an aerial theme and some excellent contemporary painting of Axis origin showing scenes of enemy air operations in WW II. Many examples of this latter work are already in place.

Primarily, the aim is concentrated in the field of military aerial accomplishment. The Smithsonian Institution's National Air Museum will be devoted to nonmilitary areas and close cooperation is the keynote between these two installations.

Two recent examples are graphic illustrations. Not long ago the Smithsonian sent a much-the-worse-for-wear Curtiss-Wright TP-40 *Kittyhawk* to Wright-Patterson where it will be restored and take its place among the dozens of historical military aircraft which have written the brilliant aerial chapter of military history.

In return, museum officials at Wright-Patterson forwarded the aircraft used by Col. and Mrs. Lindbergh on their extended flying tour of the early 30s to Washington where it eventually will join others at the Smithsonian. Present Institution facilities are exceedingly limited, but future plans call for a separate aircraft building to be erected nearby in southwest Washington, D. C.

Popularity of the present version of the museum is exemplified by the increasing numbers of people who visit Wright-Patterson annually. In its first year of operation, 1954, approximately 10,000 persons viewed the exhibits. By 1956, the annual figure had risen to 110,000, and last year more than a quarter-million took the historical stroll down USAF's memory lane.

Amazingly enough, military visitors accounted for only about one percent of this total. However, equally amazing was the fact that more than 50 percent of the visitors were from outside the immediate Dayton area, the nearest sizable city to the base.

One of the principal sources of local visitors, of course, is derived from groups of youngsters of high schools and clubs in the surrounding area. One of these recent visits had lasting effects at the museum.

During a tour which included several students from a Dayton high school, one of the youngsters cornered a museum official and, in a very confidential manner, explained that an aircraft in the external lot was not a

Zero, as identified, but a *Tony.* Museum authorities tried to explain diplomatically that they were certain they knew the difference between the two much better than a 14-year-old boy who had not even been born when the aircraft was in use, but the lad was persistent.

The plane had come into museum possession a few years earlier following a phone call from officials at the University of Illinois at Champaign-Urbana. From an unknown source, shortly after WW II, the Japanese aircraft had been presented to the university. For several years it had been displayed on the Illinois campus, but now they wished to rid themselves of the slightly-the-worse-for-wear hulk. They phoned Wright-Patterson to offer them the plane.

As the museum had no *Zero* in its inventory, a truck was dispatched. Returned to Wright-Patterson, the plane was turned over to museum shop employees and, working from photos and available *Zero* specifications, they managed to restore it sufficiently to allow it to be placed on display.

Several days after the youngster had made his startling claim, he returned bearing reams of pictures, specifications, and research material, and proved conclusively that the *"Zero"* was, in reality, a *Tony.* The revised restoration job has now been completed and the *Tony,* now properly identified, has joined its WW II contemporaries.

The museum's director, Maj. Robert L. Bryan, Jr., pointed out that it is usually the youngsters who uncover mistakes which inevitably crop up in signs and informational material on display.

Aircraft and equipment often come from strange sources. About a year ago the museum fell heir to a Boeing P-26A. (See, *Airman's World,* March-April '58). The plane was donated by the Guatemalan Air Force after long and faithful service. Purchased by that nation in 1943, it was retired only last spring.

Officials at the Smithsonian had tracked the aircraft down and been informed they were welcome to it. However, as mentioned earlier, their quarters were not large enough to allow its addition to their present inventory, so the plane was flown to Wright-Patterson aboard a Fairchild C-119, renovated, and placed on temporary display at the Air Force Museum.

It was about this same time that officials at North American Aviation, Inc., restored a B-25 similar to those used on the Doolittle raid (see, *Nowhere of Shangri-La,* Feb. '59) and presented it to the Raiders at their annual reunion. This aircraft now has found a permanent home in the museum.

In 1947, shortly after the death of Orville Wright, Mark Sloan, who joined the museum staff in 1946 and who presently bears the distinction of being its senior member, was contacted by the executors of the Wright estate. They requested him to identify and evaluate some of the materials which Orville had left.

Mr. Sloan spent several weeks going through the multitude of historic relics and, upon completion of the job, prepared to turn the newly classified material over to the Wright executors. Because of lack of space, they asked if it could be stored, on a temporary basis, at Wright-Patterson. The material has been there ever since, however, it will soon be moved to a new home.

Department of the Interior is presently planning to expand the Kittyhawk monument buildings in North Carolina and, when the job has been completed, approximately 90 percent of the new material displayed will be that under Mark Sloan's care.

Many of the USAF Museum pieces are unduplicated anywhere else in the world, but most officials at Wright-Patterson agree that the prize possession is a replica of the original 1902 Wright glider with original drawings and Orville Wright's notes and okay in his own hand. The famed Air Force Museum-Smithsonian cooperation paid off handsomely in this case when the latter agreed the papers should remain at the Ohio base despite the fact they might better be classed as national rather than Air Force historical pieces.

Despite the widespread interest and many sources of supply, the museum still lacks a good many aircraft they would like to have in their growing collection. Included are some comparatively recent versions such as the World War II Martin B-26 and the Lockheed P-38 in which such renowned fliers as Maj. Richard Bong won everlasting fame. Others include the Martin-built B-10 and B-12, the Douglas B-18, and several pre-1940 fighters.

However, their search is not confined to aircraft alone. Such items as publications which might provide valuable research material, mementos, firearms, and equipment which have historical significance are all within the wanted category. The present collection, for example, even includes a stuffed pigeon, Long John Silver, who won wide fame in a messenger role in WW I.

Officials are constantly on the lookout for any material which might be classed as historical and urge any USAF member who knows of such items to drop a line, giving as many particulars as possible, to Maj. Robert L. Bryan, Director, USAF Museum, Wright-Patterson AFB, Ohio.

Certainly, the present site of the museum could not be more appropriate. A scant five miles down the road, virtually in its shadow, is the hill in what was Hoffman's pasture from which many of the early flights of the Dayton Wright brothers were made.

The entire area is steeped in the nostalgia of the early years of aviation, and the more than 20,000 mementos housed at the AMC base are a solid tie to a past highlighted by unbelievable accomplishments.

A stroll down aviation's memory lane, epitomized in the halls of the Air Force Museum, is an experience not soon to be forgotten.

(Editor's Note: *Like all retired airmen, the author likes to reminisce. He was in North Africa when all this allegedly happened and tells this tale for* THE AIRMAN *because "history is the womb of tradition." Only trouble is, since his retirement Captain Sturm frequently lies in his teeth.)*

NAFID'S NADIAK

by Capt. Ted R. Sturm, USAF (Ret.)

His engines sang of Scheherazade
His wings bore war's lifeblood,
From the sands of Casablanca
To Burma's monsoon mud.

He crossed the high Himalayas
And brushed the camel's track
To win his infamous glory as
Nafid's Nadiak.

THROUGH 1943 to 1946—a few of the years of "Our Big War"—a fleet of USAAF transports shuttled across the infinite stretches of Africa, the arid deserts of the Middle East and the steaming jungles of India and Burma. They carried men and materiel of war in an Air Transport Command unit known as NAFD.

Pronounced *Nafid,* the initials stood for North Africa Ferrying Division. As airmen are wont to do for conversational ease, they further contracted the name to *Ferry Division,* an alias by which it rapidly and universally became the target of innumerable impish references. NAFD's notoriety became so widespread that some staffer eventually decided to dilute the indignities stoically borne by its rugged flight crews, by decreeing that no reference to Ferry would be made without the *ing.* For awhile, things quieted down. Then F. O. Nadiak arrived on the scene.

Now whether Nadiak's initials stood for his first and middle names, his begrudingly accepted rank of Flight Officer, or his reaction to duty is one of the mysteries lost in the vapor trails of his legendary exploits with the North Africa Ferrying Division.

Only three things can be said about F. O. Nadiak with any degree of certainty: Simultaneously, he (1) brightened the lives of *Nafid's* flight crews, (2) caused more wrinkles and grey hairs among the division's generals and colonels than AOCP rates, and (3) struck more cold fear into the hearts of American CBI infantrymen than any booby-trapped bottle of Saki.

He was called on so many carpets, his crewmen made small fortunes selling pieces of Persian rugs boldly emblazoned with the notation, NADIAK STOOD HERE.

Even Nadiak's origin is obscure. He first came to light when he dropped his C-54 on a strip near Casablanca. As he taxied to the ramp a flag worthy of comparison with the banners of Hannibal edged its impressive way up a six-foot pole especially constructed just outside the cockpit window.

Out of respect to the insignia of rank which he usually wore askew on his collar, broad, glaring letters proclaimed the USAAF *Skymaster* to be the flagship of the Blue Bar Airlines. In equally broad and glaring letters were the words, "F. O. NADIAK, *Captain*" followed by the explanatory note in minute letters comparable to those used when printing the Lord's Prayer on the head of a pin—*"of the ship."*

Those who claim intimate knowledge of this airborne Paul Bunyan dissolved into anonimity shortly after the end of the war. Yet airmen who say they knew someone who knew him, aver that Nadiak was a former airlines pilot with several thousand hours flying time. When the war came, he applied for a commission, but because his name begins with "N," by the time the second lieutenancies made their tortuous way down the alphabet, they exhausted themselves at "M;" everyone else became a flight officer.

Follow the Light

On one trip from India, Nadiak and his Blue Bar Airline flagship touched down at Cairo's Payne Field with a load of infantrymen returning home from the war in Burma.

Payne Field at that time was one of the busiest terminals in any theater. Aircraft and people arrived and departed in a constant stream and the ramp in front of the main passenger lounge was seldom empty.

Nadiak was slow in climbing out of the transport. When he did, he saw all his passengers milling around in the typical World War II version of "looking confused."

"What's the trouble?" he asked.

"Sir," one man ventured, "which way to the terminal?"

"Just follow the light," said Nadiak, and with that he whipped a Very pistol from inside the cabin door, fired a brilliant red flare toward the main terminal entrance, and scattered ground crews, passengers and onlookers.

What happened to Nadiak because of this? Evidently he was such an excellent pilot, that the command was reluctant to part with him. Surely he was reprimanded, but as he is reported to have philosophically remarked: *"A flight officer is even lower than a second lieutenant."*

Legend has it that Nadiak wore size 12 shoes. When he crawled into the cockpit he more often than not trampled his copilot, engineer and occasionally the radio equipment. It was this tube trampling that led to one of his most infamous exploits.

Burned in Effigy

Nadiak's Blue Bar Airline flagship took on a load of infantrymen at Karachi. The boys were weary and gun shy from months of jungle combat and repple-depple drill, and not at all enthused about flying—except that they were flying home.

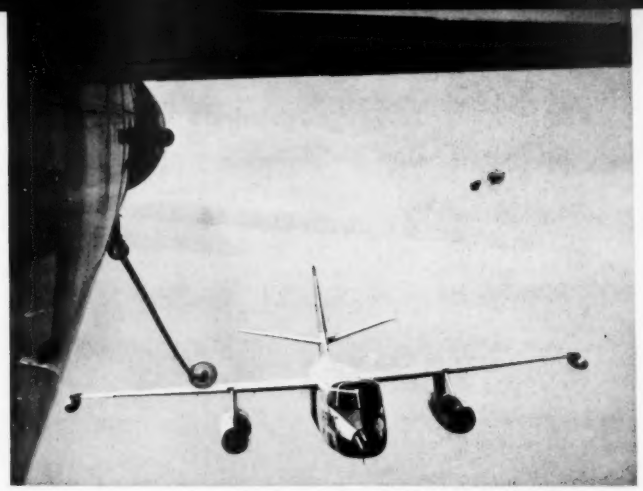
After the C-54 was loaded, Nadiak and his crew marched single file up the aisle, each man carrying a case marked with several Xs and big black letters that spelled SCOTCH. About forty pairs of infantry eyes watched the silent parade which ended in the cockpit. Shortly the craft roared down the runway, lifted into the air, and followed the bird dog on a course calculated to take it to Bahrein Island in the Persian Gulf.

Thirty minutes out, the aircraft went into a slight climb. The door to the crew compartment opened, and one by one, empty Scotch bottles rolled down the aisle to accumulate in a pile near the rear entrance. At the same time, the aircraft went into a 20-degree climbing turn to the right. As the pile of empty bottles grew taller, the infantrymen greener, and the aircraft climbed higher than the passengers thought the crew was, Nadiak, grinning like a Hindu sapphire merchant, stopped the growing mutiny by appearing in the doorway.

He explained that upon entering he had kicked the radio compass, causing it to rotate imperceptibly to the right. The autopilot followed. The bottles—empty from the very beginning—"accidentally" fell out of the boxes. And the climb was a simple one to gain cruising altitude. But by the time the infantrymen arrived in Casablanca, invaded the bistros to vent their wrath on turbaned effigies of all pilots in general and flight officers in particular, the stories grew to the point where embroidered Persian rugs again flooded the market.

Like the old soldier he wasn't, Nadiak faded away. This was inconsiderate of him, and completely out of character. Only one clue remained as to his whereabouts. In mid-1946, Nadiak, still a flight officer, crashed an embassy party in Cairo. There he demonstrated the Sudanese Zimbo-Zambo dance while doing the monkey manual of arms with a Khyber rifle, complete with bayonet.

The bayonet was a mistake. It made a slit-skirt sport dress out of the evening gown worn by the wife of a British general. Nadiak left the party escorted by two military policemen from New Zealand. He was never heard from again, but investigation revealed that the two MPs were rotating home that night.



A tactical bomber of the Tactical Air Command maneuvers into position to slake its thirst for fuel from a KB-50 flying tanker.

the secret of CASF

by TSgt. John K. O'Doherty
Airman Staff

Can TAC continue to send strike forces around the world as often as may be required, and perhaps several at one time, without coming apart at the seams?

IN July of 1958 the entire Free World watched in awed surprise and admiration as Tactical Air Command's Composite Air Strike Force streaked across the world to take up a position in the crisis-torn Middle East. Within hours after the President announced his decision, the supersonic tactical fighters were in place at Adana, Turkey, and the tremendous psychological impact of their presence was further heightened by the smooth dispatch which marked the deployment.

In a relatively brief time, tension subsided to tranquility along the Mediterranean, but scarcely had the world breathed a sigh of relief before crisis erupted in Formosa, on the opposite side of the globe. The situation was disturbing, to say the least, in the estimate of the American public and the friends of democracy worldwide who recognized the import of TAC in the Lebanese emergency. Could TAC be expected to repeat its spectacular performance without even a brief respite? Can a player be expected to carry the ball 90 yards for a touchdown twice in the same quarter?

The record shows that TAC did indeed carry the ball for a second touchdown play, with the dash to Formosa going forward even more smoothly than the sprint to the east. This second demonstration of determination proved to be as effective as the first, and once again the threat of aggression faded from the horizon.

But what about next time, and the next? Can any organization meet such demands without suffering an impairment of the structural fabric? Can TAC—in a word—continue to deploy strike forces as required, in multiples if need be, without coming apart at the seams with respect to such things as command cohesion, logistics, refitting, maintenance, and personnel?

Brig. Gen. S. B. Mack, Inspector General for TAC, explained the machinery of the Composite Air Strike Forces for THE AIRMAN. His answer to the question: "Can TAC stand the strain?" is an unequivocal affirmative.

"No move such as those to Adana and Formosa can be described as effortless or easy," said General Mack. "But, because these are exactly the kind of things TAC units are trained to do, they can be carried out with a minimum of strain. Split-second deployment, as it has been called, does not disrupt the operational pat-

Mission equipment moves to the flight line in the first hour of ORI.

tern; it is an integral part of the command's operational technique."

Committee of Twelve

TAC mobility is based on operational readiness, a term which has become generally familiar but which in TAC has assumed a highly polished degree of precision. The secret behind the dynamic flexibility of the air strike forces is, in fact, no secret at all, and can be traced to the program of periodic inspections of all operational units in the command conducted by a team of 12 men working under the command Inspector General.

Operational Readiness Inspections (ORI) are stipulated by USAF requirements once annually. For TAC units they are conducted considerably more often and with such a degree of realism that they can be distinguished from combat operations only by the absence of enemy forces. There is no resemblance to the classic "dry run" performances which have traditionally characterized military preparations in the past.

The pattern of these inspections differs only in minor detail from squadron to squadron, and these variations are dictated by differences in the type of mission. The typical inspection of a tactical fighter unit covers a period of about five days, and follows the format of a "live" operational requirement such as the movements to Adana and Formosa.

No advance notice of inspection is passed to the squadron commander; the first intimation is in the form of a mission assignment levied through operational command channels—usually from the parent numbered air force—in accordance with the EWP (emergency war plan) pertaining to the unit.

The team of inspectors does not arrive on the base in advance—even such informal "grapevine" notice is barred—the group of 12 appears on the scene just in time to see the wheels of activity begin to turn in response to the alert signal. Elapsed time permitted by the EWP between the initial alert and wheels-up for the jets may be as short as four hours.

Package Deal in Processing

Preparation to move out begins with personnel processing, a necessary function which in another generation sometimes consumed days or even weeks. An assembly line operation is established in the hangar, or the service club, or any other convenient space, and all personnel involved in the movement are completely processed in one brisk pass through the line.

Personnel records are checked and necessary entries are inserted or corrected on the spot. If a change in family status indicates the need for initiation or modification of allotments, the forms are immediately completed and signed. There is no "play-acting" or "let's pretend;" the documents are completed and dispatched promptly to the finance center at Denver. The same holds true for immunizations; if the shot record indicates the need, the needle is administered then and there. TAC men have been described as the most shot-up people in the Air Force. Personal affairs and legal matters, too, have a place in the line, and at the very end pay cards are checked and brought up to date. The speed and efficiency of this processing is of obvious importance, and TAC squadrons take pride in keeping last-minute business to a minimum by keeping abreast of affairs in everyday routine.

From personnel processing, the inspection team moves to the flightline where already the fly-away kits and other supplies are being loaded onto transports. Some of the sealed boxes are opened on the line to verify contents, labels are examined, cubage is spot checked, and elapsed time for the entire loading operation is clocked and recorded. The inspection team includes specialists in such areas as supply, maintenance, nuclear armament, and communications, so no aspect of the preparation for deployment is neglected.

The Horn Blows at Midnight

Briefing for the tactical pilots is usually held around midnight or one o'clock in the morning. There is no deep, dark obscure reason for the selection of this unholy hour. The ORI requires take-off in darkness, usually at two or three in the morning, a profile flight out over deep water and an aerial refueling operation at a rendezvous point with the tankers far at sea. Members of the inspection team fly with the formations in every phase of the test in the same type of aircraft, and share in all the problems which may be encountered.

Targets are assigned for the strike missions on the following morning after the aircraft have landed at the deployed locations. This deployed operating site may be a primitive installation hundreds of miles from home base, or may be an established air field just over the state line. In either event, the squadron is entirely dependent on its own resources for maintenance and other facilities, using the fly-away kits and skeleton personnel which follow along behind the jets in transports.

The target run which follows is a low-altitude, high-

Security guard at personnel check point consults roster of airmen authorized to pass on official business.

Orders, manifests, shots, and personal affairs are quickly attended to in processing line.

The face of this pilot is a study in concentration . . .

. . . matched by that of his teammate, the reel operator.

speed pass over strange territory. In some cases the jets will fly at 500 feet and the pilot must rely completely on instruments in the cockpit. There are no beacons or landmarks to guide him on the course. Check points manned by observers of the inspection team are established on the ground. Pilots indicate awareness of their position by wiggling the wings over a stipulated point at a specified time.

Only one bomb and one pass at the target is allowed, and impact on target must be made within 60 seconds of the time specified in the briefing. Otherwise the bomb run is charged as a failure.

Following the operational deployment, the final phase of the inspection takes place at the home base. But there is no atmosphere of anti-climax as inspectors carefully observe time and effort required to restore aircraft and equipment to a state af readiness for instant re-deployment. A complete critique is then prepared citing any areas of weakness which have been revealed, and a copy is passed to the unit commander.

Similar standards of excellency apply to inspections conducted for tactical reconnaissance and troop carrier units in TAC. Photo recon aircraft are allowed one pass at the picture, just as the tactical fighter is permitted only one bomb to demonstrate proficiency. In troop carrier exercises in conjunction with the Army, and conducted in combination with the inspection, transport crews are required to drop troops within 150 feet of a designated point on the ground regardless of wind or cloud conditions.

No Panic Button

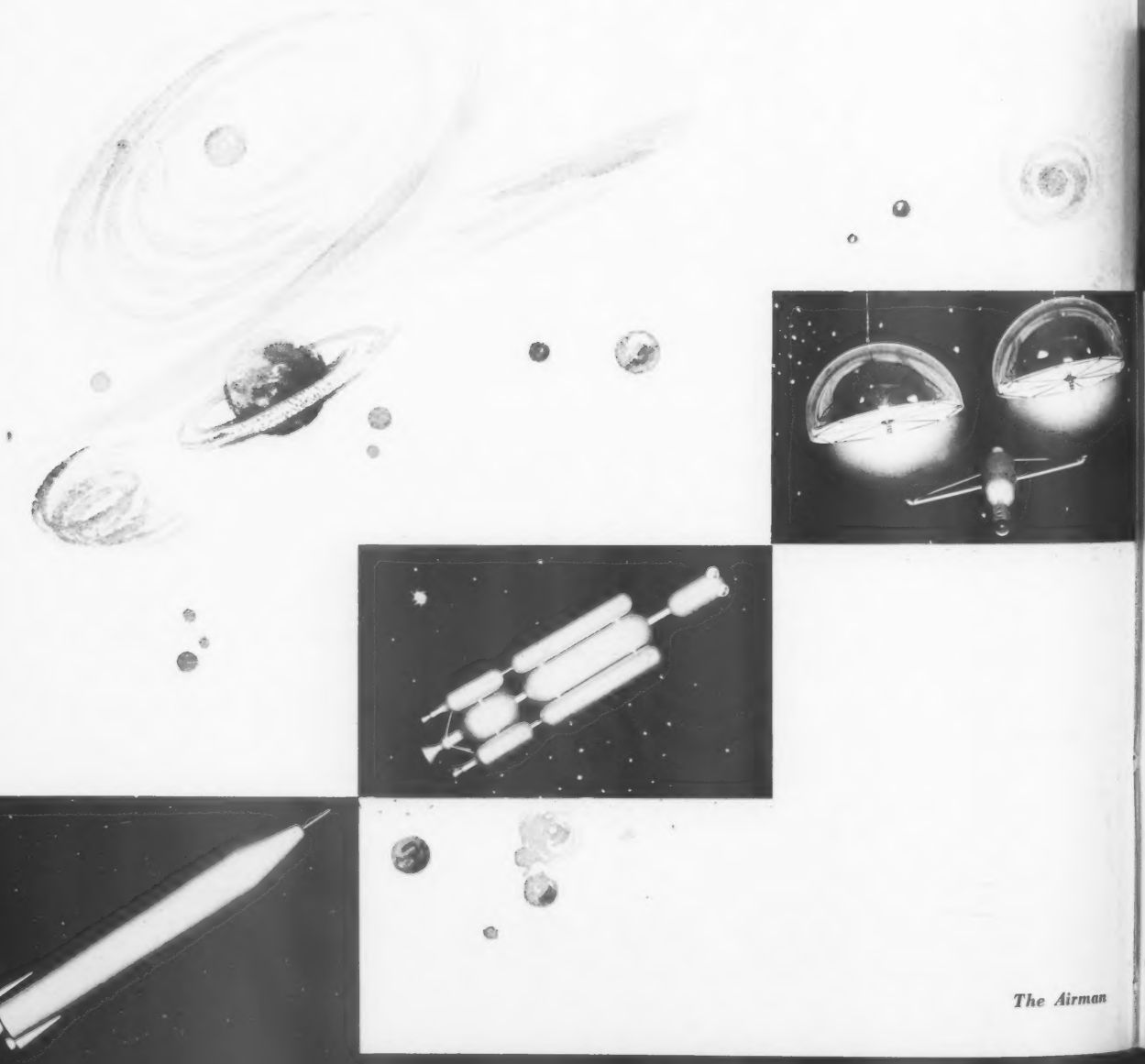
This system of rigid and precise inspection has eliminated the atmosphere of urgency from "no-notice" overseas movements. General Mack points out that there is no panic button to push when TAC units are ordered to move out immediately for a destination halfway around the world. The system is established; it is tested on a continuing basis as the testing is an integral part of the system; and, fortunately for the peace and security of the Free World, it works.

Even the normal distractions of AOCP rates, service school quotas, sickness, leave, and seasonal weather receive due consideration in maintaining the machinery of CASF polished and oiled ready for use. At any hour of the day or night, TAC can specify precisely how much firepower can be delivered immediately to any part of the world.

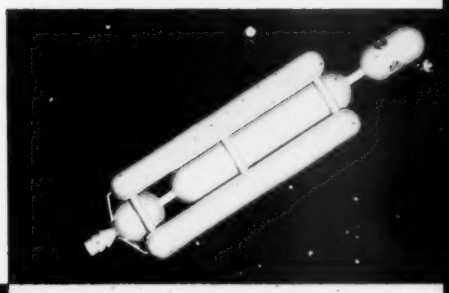
STAIRWAY TO THES

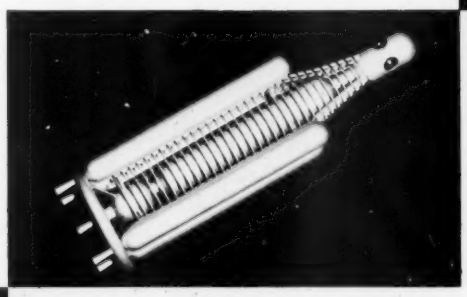
While the seven chosen astronauts of Project Mercury begin their estimated two-year training period for man's first sojourn into space, scientists of the Air Research and Development Command are looking far beyond.

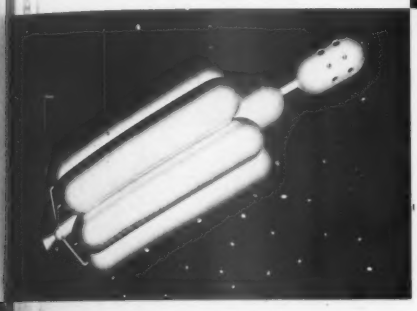
Like the progressive steps in the development of aviation, space travel will at first move falteringly and cautiously, delving farther into the unknown as each stage of exploration adds its cumulative knowledge. Reflecting this, the vehicles portrayed on these pages will employ propulsion systems which, step by step, should build man's stairway to the stars.



ESTARS







1. *In today's rocket the fuel and oxidizer are usually kept in separate tanks. They are piped through an injector into the combustion chamber where they are burned. The energy involved produces a 9,000 ft. per second thrust or exhaust velocity.*

2. *In the exotic propellant rocket, fuels and oxidizers are mixed and burned producing thrusts greater than standard liquid fuels at estimated thrust velocity of 12,000 ft. per second.*

3. *In this solar rocket, liquid hydrogen is pumped from the tanks through the large solar reflectors where it is heated and then to the rocket nozzles where it is expelled to produce a thrust velocity of about 20,000 ft. per second.*

4. *In the nuclear rocket the propellant is pumped through the reactor where it is heated to produce thrust. The estimated thrust velocity will be about 30,000 ft. per second.*

5. *In the ion rocket, heat from the nuclear reactor is used in a turbo-electric generator. The electricity is used to produce ions from the cesium propellant and also to accelerate the ions to extremely high velocities electrostatically. The expected thrust velocity will be one million ft. per second.*

6. *The photon rocket is far from realization. Thrust will be produced by expelling photons of energy instead of solid particles. The photons are produced by an annihilation process which completely converts matter into photons of energy. If possible, this process could produce a one-billion ft. per second thrust velocity.*

Brookley AFB, Ala., has borrowed the Marine's famed "on the sea, on land,

DOCKS in DIXIE

by SMSgt. Hal Bamford

NINETY-FIVE years ago this month, Adm. David G. Farragut won contemporary fame and a place in history when he stormed Mobile Bay, opened the door for the capture of the Alabama city at its head, and uttered his famous line, "Damn the torpedoes, full speed ahead!"

During the Civil War, Mobile's port was a key link in the Confederate cause, and it is no less important in today's National defense picture. Literally hundreds of thousands of tons of shipping pass through the port annually, but despite the fact it bears the distinction of being Alabama's only port and rates among the Nation's top 10, from a military viewpoint, it owes its fame to still another factor.

Just south of the burgeoning city at the northwest corner of the famed bay, lies Brookley AFB, headquarters for the Mobile Air Materiel Area and home of the only USAF-operated deepwater port in the continental United States.

McClellan AFB, near Sacramento, Calif., houses similar operations for west coast and Pacific bases but, unlike its Dixie brother, aircraft and equipment prepared for shipment there must be towed or trucked off the base to deep water facilities before the operation can be completed. At Brookley, the entire process is confined to the limits of the installation.

Brookley's Ocean Terminal is operated by the Directorate of Supply and Services. Primarily, it is the Transportation Division of this directorate which bears the brunt of responsibility, but the operation itself reads like a blueprint for interservice cooperation.

All three of the major service branches, Air Force, Army, and Navy, carry a share of the port's load with USAF in the prime role. In addition to port responsibility, it falls within Air Force purview to prepare material for shipment, stockpile it until a minimum point has been reached, then get it to the dock area, and load it aboard the carriers. Almost without exception, operators of the dock's equipment are USAF-employed civilians.

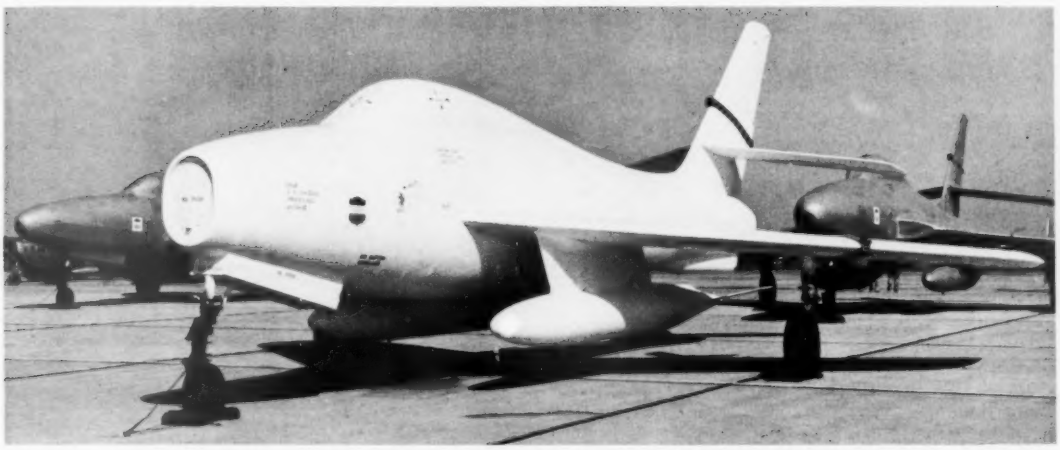
On the other hand, most of the stevedores, also civilians, are Army-employed. Just 150 miles west of Mobile, the Army operates the New Orleans military port facilities, and the hiring of dock helpers for the Louisiana and Alabama ports is its responsibility. The Navy portion of the operation derives from the fact that a good percentage of the ships utilizing the Air Force port are MSTS-operated.

However, the major portion of the dock's business is with civilian-operated vessels. For example, even the two assigned carriers are civilian-crewed with only a few Navy personnel aboard.

Until recent months, the Navy operated the *USS Tripoli* and *Corregidor* out of the Brookley basin. Now, the *USNS Card* and *Croaton* call the MOAMA port home. As a means of clarification, USS indicates the vessel is Navy-owned and Navy-operated, and simply means United States Ship. The USNS designation means United States Navy Ship, however, in this instance, while Navy-owned, the craft is civilian-operated (Civil Service) with only a limited number of the sea arm assigned to each ship.

Naturally, before ships this size may begin using a port, major shipping facilities must be established. Brookley is no exception to this rule. The present branch channel to the MOAMA docks from the Main

and in the air" slogan.



Mobile Ship Channel is more than two miles long, 29 feet deep, and about 300 feet wide. Included in the water facilities is a turning basin, 825 feet long and 40 feet deep.

Extensive Government-owned dock equipment, including a huge mobile railroad crane, is available at all times at the terminal, and motor vehicles and ground-handling equipment are readily available as needed.

Strangely enough, none of the rail equipment, except the crane, is needed in handling the biggest item which passes through the port—aircraft. The dock area is readily accessible, and most aircraft are simply towed off the flightline, down the road a scant half-mile, and directly onto the pier, all without leaving the premises of the base.

From time to time, over the course of the last few years, troops have moved through the Brookley port, but they are an exception rather than a rule. The port does, however, move regular supply shipments to Ramey AFB, Puerto Rico, on a "more-or-less" scheduled basis and smaller Navy and commercial vessels utilize the water station for this purpose. In addition, barges are used for short hauls between the military and downtown civilian docks.

By far the vast majority of outgoing cargo is priority in nature and moves by the most expeditious means—air shipment. However, organizations in the field also have recurring supply items which are ordered on a periodic basis, and their immediate movement is not necessary. Consequently, these are stockpiled in the dock area until a prospective shipment has reached a minimum of 250 measurement-tons. Then a ship is called in and the supplies moved out. Only seven such port calls were made during 1958 indicating that pipeline supply methods of former years are rapidly being replaced.

The principal item of scheduled shipments moving through the port, fittingly enough, is aircraft. As a depot, MOAMA is charged with prime responsibility for three USAF aircraft and a missile system. These include the Republic-built F-84 series and F-105, Grumman SA-16, and the SM-78 *Jupiter*. While many other types of aircraft, including helicopters and L-types, have moved through the port from time to time, the main source of cargo has been aircraft from the F-84 series.

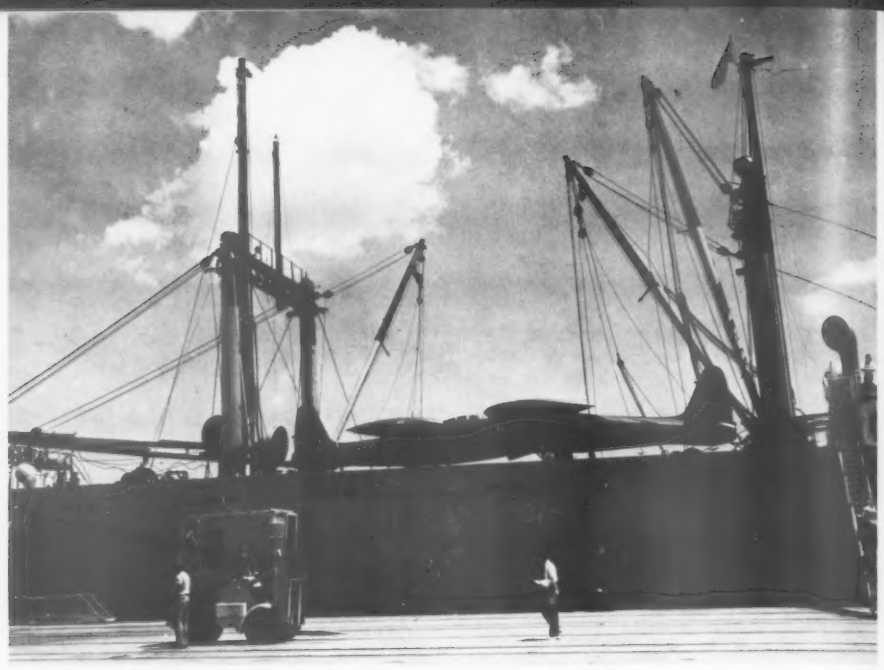
Operation Seaspray

Quite naturally, any planes moving by sea from a port such as that operated at Brookley are headed for a rather extensive ocean voyage. Most of those departing the Alabama base will eventually wind up in NATO air forces. This means extended periods aboard the decks of seagoing carriers, often in mighty foul weather.

Probably nothing can be more damaging to aircraft surfaces than salt water spray. Consequently, some method had to be devised to protect these shipped aircraft during their periods of forced inactivity and exposure. The result is a novel operation called *Seaspray*.

Aircraft emerging from Brookley's Hangar 17 after being processed give much the impression of huge, rolling, silver cocoons. For all practical purposes, the process may be called an extension of normal USAF 72-hour flyaway storage.

Aircraft being prepared for these ocean voyages go



F-84s, returning from Europe, are readied for unloading from a freighter.

through a standard three-step processing—incoming preparation, preparation, and preservation in *Seaspray* parlance.

Step one consists of "pickling" such parts as rust-prone engines, and is a standard storage procedure. In the second, in addition to complying with Technical Order 00-80AA-1, all openings, plexiglas surfaces, and aircraft markings are covered, and obstructions, which might hinder lashing the aircraft once it is aboard ship, are removed.

Finally, the plane is covered with three layers of vinyl plastic to a thickness approximately equal to that of a half-dollar. The base and outer layers are silver; the center, tinted red to allow easy identification for workers on the receiving end who must remove it.

Depending upon the weather, the spray process takes approximately 90 to 110 gallons. Because of the properties of the vinyl material used, temperatures play a key part in the spraying and shipping processes as the vinyl relaxes in heat, tightens in cold.

Consequently, right from the spray booth, weather governs not only the amount of material used, but also the continued success of the protective coat. Once an aircraft has been rolled out of Hangar 17, it is immediately exposed to the elements until it reaches its eventual destination. Until it is placed aboard ship and its floating home takes to sea, temperature changes are usually uniform enough to prevent major problems from arising.

However, once that ship sails, some rather drastic fluctuations may be in store for it before it reaches its final home. Depending upon the sea lanes followed and the season of the year, temperatures may range from relatively high to well below zero. Even aboard carriers, most of the aircraft are lashed above decks, and protection becomes a vital element.

As a result, *Seaspray* sends at least one man along with emergency kits for immediate repair jobs. Most commercial ships carry a limited number of aircraft, averaging about four or five per trip, and only one man is assigned for such cruises. But on carriers, where 38 aircraft are normally loaded for each run—29 above decks—two men make the voyage. These escorts are charged with daily inspections designed to head off any major problems which might arise at sea.

Smoothness of present-day port operations at the AMC base give every indication that marine processing is not a Johnny-come-lately type of assignment. In reality, port operations at Brookley, measured against the base's history, are almost as old as aerial operations.

Brookley was activated in 1940 and, even before this Nation entered World War II, plans were underway to utilize the port potentialities which its location offered. Actually, it was not until 1942 that the feeder channel was dredged and construction started on the Ocean Terminal.

However, once in operation, the docks played a vital role in the war effort, and many thousands of vital tons of material flowed through the Brookley port although the effort was only a small fraction of the shipping plying Mobile Bay and flowing in and out of the city's main port.

When the shooting stopped in 1945 and America and the world began a transition into peacetime defense missions, activities gradually decreased and eventually the port reached the point of near inactivity. The channel was not maintained, and sifting silt seriously limited the size of vessels which could navigate into the Brookley docks. Finally, activities reached the point where almost all shipping was restricted to barge operations.

With the outbreak of the Korean conflict in 1950,

interest in the Brookley port was revived. Numerous studies were initiated, and eventually agreements were reached between the Air Force, Army, and Navy Departments to revitalize and expand the original plan of operation.

In 1953, the channel was redredged to its present depth and, in 1954, the function of processing, shipping, and receiving aircraft to and from the European area by surface means was transferred from Newark Transportation Control Depot in New Jersey to MOAMA.

Phase-in of the operation began in July, 1954, and was completed a month later. The first increment of aircraft, 41 F-84s destined for Santander, Spain, was loaded aboard the *USS Tripoli* and sailed on August 31, 1954.

Through the end of calendar year 1958, 169 ships carrying almost 2,900 aircraft weighing more than 46 million pounds have sailed from Brookley's docks. In addition, 53 trips have returned more than 700 aircraft from overseas ports for depot overhaul and reassignment. Some of these have been Army and Navy types, processed by Brookley under cross-servicing agreements, but the vast majority have been earmarked for or returned from allied nations under terms of the Mutual Assistance Program, or from USAF units stationed on the continent of Europe.

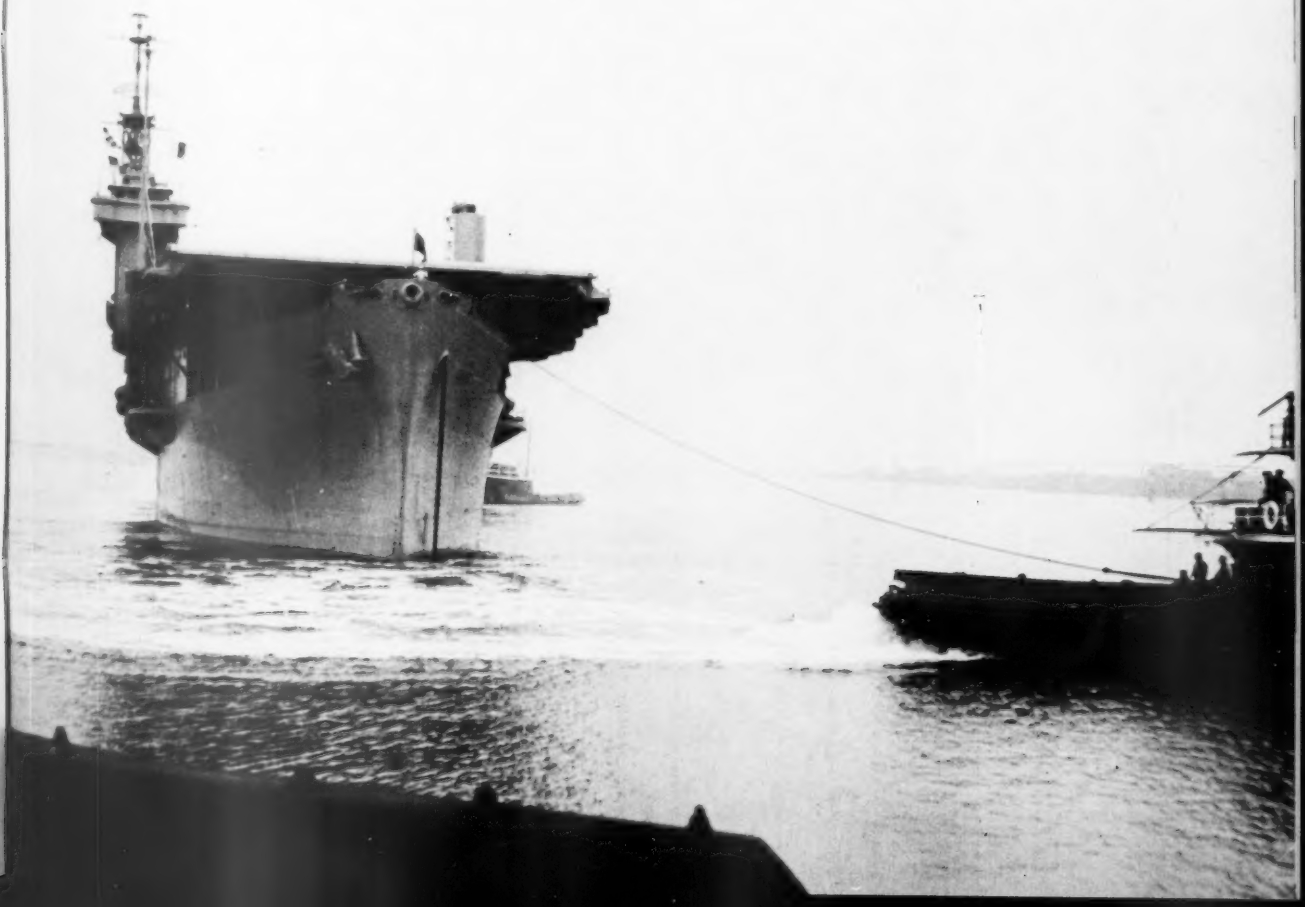
Operations expanded so rapidly in recent years that it became necessary to establish a position of Marine Superintendent within the Transportation Division to handle the additional load.

Primarily, his job is to assist in the coordinating of all surface movements, in and out of the Ocean Terminal; to represent the base to all vessels calling there and in all other matters involving the port; and to maintain liaison between the several services and with commercial operating officials in the U. S., at overseas destinations, and with ships at sea.

Although marine operations are expansive at Brookley, any idea that this is the primary purpose of the base should be discarded at once.

First and foremost, Brookley is an AMC station—charged with normal AMC duties—and headquarters for the Mobile Air Materiel Area, presently commanded

USNS Caro *being "tugged" into position at the Brookley AFB Ocean Terminal.*



by Maj. Gen. Daniel F. Callahan. In addition to normal supply responsibilities, MOAMA's next largest workload is centered about its prime responsibility for the Republic F-84 program, which simply means that it has the special responsibility of monitoring the worldwide distribution of the F-84 and related property classes and expediting all corresponding contracts.

Its materiel responsibility includes territory extending roughly from the Great Lakes to the Gulf of Mexico and from the Appalachian Mountains to the Mississippi River and covers 10 states in America's industrial heartland.

Its procurement responsibility extends from Canada to South America, and eight field offices assist in the accomplishment of this portion of the mission. Air Procurement District Offices are located in Detroit, Mich., Cleveland and Dayton, Ohio, and Indianapolis, Ind. USAF plant representative offices are maintained at the Republic plant in Farmingdale, L. I., N. Y., and at Hayes Aircraft in Birmingham, Ala. Two other facilities are located in Louisiana—the Gulf Logistics Terminal in New Orleans and a storage site in Baton Rouge.

MOAMA's Supply Directorate stocks nearly 300,000 items representing 600 supply classes. Of these 32 are prime items for Brookley. In addition, the base is in the process of picking up an additional 126,000 items and 158 prime classes from depots and storage sites which are being phased out under the Improved Logistics Program.

Establishment of the big depot back in 1939 touched off a mild industrial revolution in Mobile, and today the base's 16,000 employees represent the largest wage-earning group in the entire area.

Actually, the land which now comprises a large part of the base has been utilized for aviation since 1925. From then until 1928 when the site became Mobile's Municipal Airport, it was used by the 106th Observation Squadron of the Alabama National Guard.

Early in 1939, with Europe in turmoil and despite the fact that WW II was still some months away, Air Corps planners began shopping around for a suitable site for a new depot. Finally, in July, they announced selection of the present site and less than a year later, in June, 1940, actual construction began.

Since that day, the base and its facilities have grown by leaps and bounds until, at present, MOAMA has become a 1,975-acre industrial giant which provides more than a third of Mobile's industrial income.

The city's growth has kept pace with its military neighbor, its population bounding from 80,000 to a near quarter million in the past two decades.

Whatever the extent of the city's contribution to the efforts of the Confederacy a century ago, it hardly seems logical that it could have approached the accomplishments of the bustling Brookley giant now sprawling along the shores of its bay.

MOAMA has justly earned its right to be known as USAF's only land-sea-air depot. Its near-2,000 acres hum with activity; the skies above are dotted with multitudes of aircraft; and the Docks in Dixie are seldom empty as Brookley daily fulfills its three-fold mission.

Wendell H. Brookley

Pioneer Airman

Wendell H. Brookley, the aviation pioneer for whom Brookley AFB, Ala., was named, joined the Aviation Section, Signal Reserve Corps, as a private in July 1917. He completed pilot training early in 1918 at Fort Logan, Utah, and was commissioned a second lieutenant in March 1918. Then, despite his request for overseas service, he was sent to Kelly Field, Tex., for duty as a flying instructor.

Shortly after the Armistice was signed in November, 1918, the lieutenant was transferred to Fort Mills, Corregidor, Philippine Islands. Following this duty tour he served briefly at Fort Sill, Okla., then was sent to McCook Field, Dayton, Ohio, for service as a test pilot in 1922.

At Dayton the lieutenant became familiar with nearly every production and prototype military airplane in existence, including the Loening 34 amphibian, the Waco 9 biplane, and the Mohawk *Pinto,* a low-wing monoplane which, in the 1920s, was considered to be of extremely radical design.

In addition to testing airplanes, Brookley participated in night flying activities that contributed to the development of airplane landing and navigation lights, improved parachute flares, beacon lights, runway boundary and obstacle lights, and illuminated wind indicators. His participation in Army air carnivals as a stunt pilot and skywriting expert helped to point out to the American public the capabilities of miltary aviation.

On October 4, 1924, flying a tiny Curtiss racing plane fitted with a 520 horsepower engine, Brookley averaged a speed of 214.45 miles per hour to take second place in a Pulitzer Trophy Race at Dayton.

Brookley was promoted to first lieutenant in 1929 and to captain in 1932. He was graduated from the Air Corps Engineering School in 1932 and assigned duties in the Office of the Chief of Air Corps shortly thereafter.

This was his final duty station.

On February 28, 1934, Capt. Brookley and a passenger, Col. Merrick Westbrook, made a normal takeoff at Bolling Field, D. C., and climbed to 400 feet where the engine on their basic training plane suddenly ripped loose from its mountings and fell to the ground. The airplane, tail-heavy and unable to maintain flight, plunged to the ground, out of control. Colonel Westbrook was seriously injured in the crash. Brookley, who had managed to jump before the crash, was found dead near the wreckage, his parachute unopened.

On November 23, 1940, Secretary of War George H. Dern signed an order designating the Mobile air field as Brookley Field, in honor of this captain who had contributed so much to the advancement of aviation.

—TSgt. HAROLD L. CRAVEN

AIRMAN'S WORLD

Briefs from USAF, worldwide

Thunderchief Tigers
see page 32

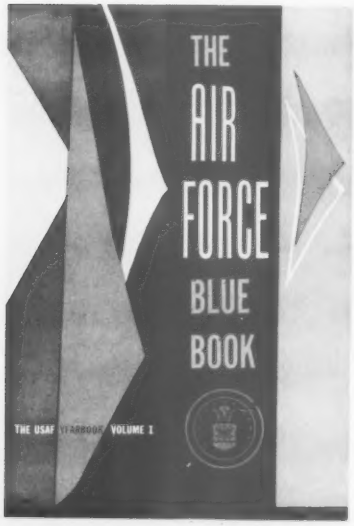
Thunderchief Tigers

Thanks to a unique, combined evaluation team setup, Republic's new F-105 *Thunderchief* is closer to combat readiness and final acceptance as it is assigned to an operational organization than any aircraft in USAF history.

For testing purposes, members of TAC's 335th Tactical Fighter Squadron, first organization in the Air Force to be equipped with the double-Mach fighter, joined ARDC evaluation experts for the testing phase at Eglin AFB, Fla.

The result was elimination of reams of paperwork, sharp reduction in the need for factory modification trips, and savings of millions of American tax dollars.

Key among the 335th members who participated in the tests were (l. to r., on page 31) Lt. Col. Robert Scott, commander; Maj. Pat Chennault, son of the late great general; and Maj. J. E. Bean.



USAF Blue Book

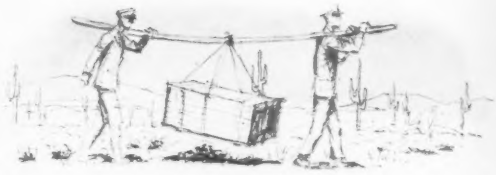
A new and unique publication, devoted solely to the Air Force, hit the newsstand early in May.

As a measure of its worth, *The Air Force Blue Book* has met with ready acceptance at every level. Secretary of the Air Force James H. Douglas greeted its appearance by saying, "The book should do much to broaden public knowledge of the Air Force and to create a better understanding of military airpower in modern affairs."

General Thomas D. White, Chief of Staff, has called it "an extremely worthwhile contribution to the literature of the Air Force."

The *Blue Book's* 384 pages are divided in two sections. Section I is devoted to 45 narrative chapters covering Air Force activities and commands. The writing is terse and readable, the chapters short. Section II is titled *Air Force Facts* and consists of a comprehensive tabulation of information about the Air Force, its organization, commands, aircraft, missiles, history, and bases.

The publication, available in paperback form for $1.00 or in hardback editions for $4.95, may be purchased at most BXs or may be ordered directly from the Military Publishing Institute, Inc., P.O. Box 2688, Grand Central Station, New York 17, N. Y. By purchase in wholesale lots, significant discounts are available.



Testing Shift

ARDC officials announced recently that the rocket section of its Wright Air Development Center propulsion laboratory will move from Wright-Patterson AFB, Ohio, to Edwards AFB, Calif., by the end of the year.

The move will involve approximately 150 military and civilian employees.

The rocket facility has outgrown WADC capabilities and Edwards will provide a big additional safety factor for the operation. Noise and resultant public relations aspects will also be considerably reduced by the move into a less populated area. Location of the facility in California provides the basis for improved liaison between the center, the Air Force Ballistic Missiles Division, and most missile manufacturers.

New Crop

A new development, centered on a revolutionary method of "growing" germanium crystals, may prove to be a major step in the minaturization of important electronic systems.

Germanium is a grayish-white, brittle, metallic element which resembles carbon and silicone in some respects and tin in others. It is a key material in the search for reduced volume in space-bound electronic equipment.

The new "growing" process allows development of this element in the form of thin, uniform flat ribbons where formerly the raw product was round and about the size of a .50 calibre bullet.

Under the old process, the material had to be sliced infinitely thin and polished. Now, the ribbon is ready for direct use thus measurably reducing construction time for technical devices in which it is used.

The tiny new crystal formations may perform functions which require several dozen present-day components. Officials at ARDC labs indicate that future

designs will be drastically reduced in size, weight, and power requirements. Eventually, electronic systems, which are presently about the size of a breadbox, will be replaced by systems no larger than a cube of sugar.

The advantages of such size reductions will allow packing more equipment, designed to do a far greater range of jobs, into smaller space vehicles, missiles, and rockets, thus reducing the need for continually increasing the size of powerplants.

USAF has awarded a $2 million development contract to the Westinghouse Electric Corp. to further studies in this area of electronic progress.

Reduced Requirement

MATS officials have announced drastic reductions in the amounts of survival equipment needed for scheduled polar, desert, and jungle flights.

Despite a slice of more than two-thirds in total weight of survival gear, safety has been in no way compromised. The new concept is based on the fact that MATS aircraft now fly over well-traveled routes and are in constant range of voice communication. Coupled with the increased availability of well-qualified rescue teams and improved survival equipment, the new package becomes more than adequate.

The changes, written into a new MATS regulation aimed at regularly scheduled flights, do not limit commanders of other operations in remote areas from carrying such additional equipment as they may consider necessary.

Sound Tactics

USAF is getting set to put sound on the spot—systematically. How? With a pocket-sized gadget called a noise meter.

Its purpose: Monitoring the exposure of certain personnel, equipment, and laboratory animals to varying intensities of sound.

With personnel on jobs that necessarily subject them to a particular range of noise levels, the newly-patented invention will time the duration of the noise factor—data expected to help show the way to safer and more efficient operations since sound can be most fatiguing.

Main components of the device are a microphone, amplifier, intensity discriminator, and a number of miniaturized clocks. As soon as a selected intensity is identified by the discriminator, the corresponding clock is triggered and runs as long as the noise continues at or above its initial level.

Designed for the Air Force, the noise meter is a product of hands-across-the-sea collaboration by inventors, Wolf-Wito von Wittern of Karlsruhe, Germany, and Henning E. von Gierke, Medway, Ohio.

Back Home

"Station Alpha 2," the 1959 USAF ice island project, will have at least one familiar face in its contingent when Capt. James H. Smith, who led the 1958 project, again occupies the same position.

The 35-year-old Oklahoman will head a slightly enlarged group of scientists, technicians, and support personnel for the '59 project.

Last November, *Operation Ice Skate* ended abruptly approximately 240 miles from the North Pole when storms partially demolished the camp's mile-square ice floe. Captain Smith directed rescue efforts which saved the 20 scientists and technicians who were riding the ice island.

Visual Tradition

In April, 1942, Col. Jimmy Doolittle and his Tokyo Raiders scored an ego-deflating raid on Japan's capital city. One of the members of that aerial raiding party was Lt. Ross Greening who designed the "new" bombsight used by the crews. (See, *Nowhere of Shrangri-La,* February '59 issue.)

Later Lieutenant Greening went on to fly combat in

the North African-Mediterranean Theater. There, on a bombing mission against the Italian mainland, his aircraft was shot down and he was captured. He escaped briefly, only to be recaptured and transferred to a prison camp in Germany where he sat out the war.

Greening, however, was not the type to remain idle long. While in the camp, he fashioned several brushes from human hair and, with paint soaked from tin can labels, painted several pictures of air battles in which he and his fellow prisoners had participated.

Two years ago, Colonel Greening died at Bethesda Naval Hospital near Washington, D. C., from an illness contracted while serving as air attache in Australia.

Early this spring, Mrs. Greening, with her two sons, Allen, 11, and Bill, 9, presented two copies of books of these paintings, entitled, *Not as Briefed,* to the United States Air Force Academy to add to the growing collection of air memorabilia in the Academy Library.

Shown with Mrs. Greening and her sons at the presentation are Lt. Col. George Fagan, Director of the Academy Library, and Cadet Col. Herbert Adamson, who served as Cadet Wing Commander before his graduation last month.

SAC Time

If a single aircraft on a continuous flight had accounted for all SAC's flying time since its activation some 13 years ago, the crew would have witnessed an unparalleled chunk of world history.

When would they have taken off? Well, if they had used a jet bomber, the noise would have startled a baby named Charlemagne, born in the year 742 A.D.

Years later—249, to be exact—they could have watched Leif Ericson discover the North American continent. They'd have had a ringside seat for the Crusades, accompanied Marco Polo on his famed travels, circled over the landing of the Pilgrims at Plymouth Rock, and watched the rise and fall of Napoleon.

Since its inception, SAC aircraft have compiled a total of more than 10.6 million hours of flight—enough to keep a single aircraft aloft for more than 1,216 years.

Just imagine the back pay they would have accrued.

Planned Career

There's nothing quite like having someone keep a special eye on you—especially when you know they're going to continue to do so for at least 30 years.

That's the position in which Lt. Richard Head presently finds himself. The Reese AFB, Tex., instructor pilot is one of a group of subjects participating in a special cardiovascular blood observation project.

The long-term program was designed to study the relationship between aging and coronary artery disease, and to chart the effects of lipopretins and other fatty parts of the blood on cardiovasculary changes.

West Point's class of 1956 was selected for participation in the long-range project. Each even-numbered year, for at least the next 30 years, blood will be taken from the 475 class members and developments charted.

Tests began with the class at the Academy in 1952, and the fifth sampling is scheduled for next year. The selected officers will remain subjects as long as they are on active duty.

Lockheed's GC-130A, the Drone Launcher/Director, is shown as it takes off on an early test flight, cradling two Ryan Q-2A *Firebees.* Two of the aircraft will be modified for use in the research, development, operational evaluation, and aircrew training phases of Air Force air defense weapon systems. The jet propelled *Firebees* will be released at high altitudes to test Air Defense system capabilities under operational conditions.

Countermeasures

USAF has okayed plans for the fabrication of prototype parts to be used in the vital USAF Ballistic Missile Early Warning System (BMEWS).

The prime contract for the project has been awarded to the Radio Corporation of America (RCA) with several sub-contracts let to numerous other firms.

To insure maximum coverage, the completed radars will be located at BMEWS installations in the far northern latitudes. Consequently, all equipment which will be included must be capable of operating in temperatures as low as —65 degrees Fahrenheit.

Additionally, a new type protective radome is being developed which will boast six-inch-thick walls of paper pressed into a honeycomb and faced with plastic-impregnated fiberglas capable of withstanding gale-force winds.

Stations in the system will be designed to detect and track potential enemy missiles while they are still over the launching territory thus providing a maximum margin for alerting defense and retaliatory forces.

Bits of Blue

. . . New and revised APTs for the August, September, and October testing periods will be presented in six career fields. These include 25 (Weather), 33 (Atomic Weapons), 47 (Motorized and Miscellaneous Equipment), 65 (Procurement), 73 (Personnel), and 74 (Special Services).

. . . Airmen at Torrejon AB, Spain, have no problem in disposing of empty bottles—any size. Padre Joaqin Sanche, known throughout Spain as Father Bottle, gathers them for a worthy cause. He sells the empties, then uses the proceeds for construction of housing for the poor.

. . . Nine airmen at Suffolk County AFB, N. Y., recently received the Soldier's Medal for their part in combating an aircraft explosion fire in a hangar at that station. The honored men were Capt. Curtis Clauson, Lt. Jere DuBose, TSgt. James Morgan, SSgt. Pike Page, A/1C Raymond Stephens, A/2C Wallace Hurder, A/2C Carmine Naddeo, A/3C Joseph Colossa, and A/3C Marvin Horowitz.

. . . USAF has asked the Office of the Secretary of Defense for permission to dispose of nearly 11,000 acres of land at Barksdale AFB, La. The area was formerly used as a bombing and gunnery range.

. . . A new USAF Tactical Missile School assigned to TAC began operating early this month at Orlando AFB, Fla.

. . . The 556th Strategic Missile Squadron will complete its move from Patrick AFB, Fla., to Presque Isle, Maine, this month. The squadron is a unit of the 702d Strategic Missile Wing.

You Ask It

Q. I have an insurance policy, issued during the Korean conflict, which has the prefix letters "RS" before the policy number. I heard recently that such policies may now be exchanged for another type of term policy which will cost me much less in premium payments. Can you provide any details?

A. Policies, such as that you have described, are presently eligible for exchange. The new type term-policy may be had for approximately two-thirds less premium cost. However, they are not renewable after you pass your 50th birthday and must be converted to one of VA's permanent plans before then if you desire continued insurance protection.

Q. Shortly after the end of WW II, I converted my GI term insurance to an endowment plan. Now, with the growth of my family and increased living expenses, I am having a problem meeting the premiums. Is it possible to reconvert to term insurance?

A. Despite the wording on your policy which says no conversion is possible, the law was recently changed and you may now reconvert your policy. However, it must be to a less expensive permanent plan, such as ordinary life, and not back to term insurance.

Q. I bought a home with my GI loan when I was assigned to this area about three years ago. Now I have received orders for an overseas assignment and have decided to sell the house. Must the loan be paid in full before I can sell?

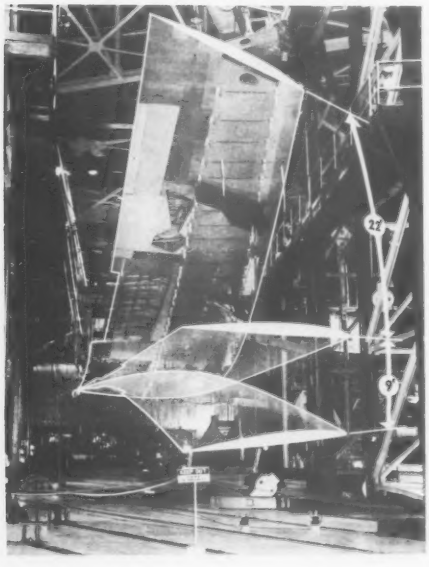
A. Not necessarily. If three criteria are successfully met, the buyer may assume your loan and liability. First, he must be willing; secondly, your payments must be up to date; and finally, the VA must certify the prospective buyer as a satisfactory risk.

Q. I understand the WW II GI home loan deadline is about to expire. Can you tell me when this will be and what arrangements must be completed by this date?

A. The WW II GI home loan expires on July 25, 1960. By that date, you must have completed your application. You then have an additional 12 months in which to complete all loan arrangements.

Q. I was discharged recently after a normal tour of duty. Now I am applying to VA for disability compensation which, I believe, is service-connected. If this compensation is granted, will it be paid at the same rate as wartime compensation, despite the fact my service was during a peacetime period?

A. Unless your disability was incurred under extra-hazardous conditions, such as simulated warfare, your compensation will be paid at a rate which is 80 percent of the wartime level.



"Tests to destruction" of the new Boeing B-52G *Stratofortress* have proven the structural integrity of the giant bomber. For example, wing torture tests on the 225-ton missile platform aircraft revealed an arc of 31 feet—22 feet upward and 9 feet downward—from the normal position could be expected before the wing would snap under the strain. Engineers have concluded that this allows for approximately 50 percent greater loads than any expected during the flight operations.

CORRECTION

In the *You Ask It* column of the April issue, we cited a supplement to AFR 39-9 as a source of determining the status of current surplus AFSCs.

This is incorrect. The AFR cited should have been 39-8.

Air Age Library

RELATED READING

Through the Frozen Frontier: The Exploration of Antarctica, Rear Adm. George Dufek, (Harcourt, Brace and Co., $3.25). Admiral Dufek commanded Deep Freeze I, II, III, and IV and knows the continent at the bottom of the world as well as any man. He covers the many details of the enormous four-year project from planning to completion, and vividly describes the geography of the continent and weather problems which faced personnel during the project.

PROFESSIONAL

The Army Almanac, edited by Military Services Division, (The Stackpole Co., $8.95). A completely revised edition of the earlier 1950 publication. A factual and authentic reference work which covers the combat arms of this service in detail and includes a condensed military history of America's past wars, both major and minor.

ASTRONAUTICS

Medical Science and Space Travel, William Kinney, (Franklin Watts, $3.95). A compilation of a series of revised articles which appeared in THE AIRMAN, telling the story of medical space science and the challenge with which scientists are faced to put a man in space.

Space Weapons: A Handbook of Military Astronautics, edited by the *Air Force* magazine (Praeger, $5.00). A collection of articles by top USAF military and civilian scientists on all aspects of space weapons, man-in-space research, and development programs. The book provides an excellent history of Air Force efforts in the field.

Earth Satellites, Patrick Moore, (W. W. Norton, $3.95). A revised edition of the history of high altitude research, rocket testing, and earth satellite programs. The author includes a speculative section, based on present information, which deals with man's first venture into space.

HISTORICAL

The Years of the Sky Kings, Arch Whitehouse, (Doubleday, $4.95). A popular history of the first war in the air written in terms of the planes and the men who flew them, both Allied and German. Primarily, the narrative is woven around personal pilot exploits, but it also treats the development of air tactics, aircraft, and armament during the war years.

Shooting the Breeze

Government Waste

An angular woman of middle age visited one of our bases and expressed views freely on what she saw. She felt strongly about the costs of implements of war and said so.

She accosted a 2d Lt. who was wearing a parachute.

"Young man, what's that thing on your back?" she asked.

"A parachute, ma'm," he replied

"Ever use it?"

"No ma'm, never used it yet."

"Humph, never used it," she said with considerable feeling. "Waste. That's what it is. Sheer, unadulterated waste."

AIR FORCE, Jan. 1945

R&D

The good natured rivalry between Harvard and Massachusetts Institute of Technology seems to have extended into the ether if we are to believe a story told during WW II.

During the war, M.I.T. operated its Radiation Laboratories, a super-secret research section which developed many of our radar devices. A half mile away Harvard's Radio Research Laboratory was deeply engaged in developing radar countermeasures. The two staffs woud go about their researching in amiable fashion until the occasion arose when the Radiation Lab radars would be transmitting at the same time the Harvard scientists would have their RCM jammers turned on—and on the same frequencies. These coincidences would usually send an M.I.T. official screaming to the Harvard staff, "For God's name, turn off your jammers. We have an important demonstration going on to prove how good our sets are, and you're lousing up the show."

AIR FORCE, Dec. 1945

Flight Pay

Finance clerks probably get more questions than any other group in the USAF. Recently one was queried by a 2d Lt. just out of flying school who asked, "Does link trainer time count for flying pay?" The airman, without hesitation replied, "Well sir, if you can get it off the ground we'll pay you for it."

Art of Writing Backwards

by 1st Lt. Henry M. J. Halligan
Montauk Air Force Station

Man! What kind of an Air Force is this?

First they send me, like I mean nowhere, to Texas for four weeks and for three of those weeks I walk around with rocks in my hands. Now here I am in this crazy Mississippi. What now? These cats are making me learn to write backwards. Man! Like I mean, this bugs me.

For most of the new trainees at the Air Force's school for radar operators at Keesler AFB, Miss., learning to write backwards is not the most difficult job in the world but it can become pretty disconcerting at times. It is but one of many related jobs taught to a prospective radar operator during the accelerated six weeks' training program.

As a plotter of radar reported tracks, the operator stands behind a large map superimposed on a plexiglas board almost as high and wide as the room in which it is located. It might be said with a good deal of truth that for the period of time this man spends behind "the board," his whole world is backwards. Not only must he write backwards, he must also read backwards. The giant map and all the lettering on it is seen backward. All this is necessary so that the men making the decisions from in front of the plotting board can have an accurate and current picture of an air defense situation.

Learning to write backwards requires practice and more practice until it is second nature to write **BBƧMBB** instead of BB2MBB. However, when a habit pattern is formed, further complications arise, because now letters will tend to appear correctly written either backwards or forwards. This often causes a carryover into everyday correspondence, and the airman finds himself printing his name backward on official documents or writing a letter home with the salutation reading **"OLLƎH."**

Therefore, an airman's life can never again be the same. Even the most experienced airman may get confused during a high density traffic situation, particularly when a practical joking buddy says, "Hey! Your figure 'one' is backwards," or "You made your '0' upside down."

The one consoling factor is that he is playing an important part in the air defense picture, because without the information he is depicting, it would be impossible for those in higher positions to make the important decisions necessary to the defense of the Nation.

In the Name of Congress

No. 10 IN A SERIES

HINGES of HADES

Raids against Germany's submarine strength were beginning to have a telling effect by spring, 1943, thanks to the determined efforts of the 8th Air Force.

by SMSgt. Hal Bamford

On May 4, 1943, Grand Admiral Karl Doenitz, one-time commander of the Nazi U-boat fleet, summed up the Allied bombing effects on German submarine production briefly and forcibly in a meeting of the German Central Planning Office. He noted, "The Anglo-Saxons' attempt to strike down the submarine war was undertaken with all the means available to them. You know that the towns of Saint-Nazaire and Lorient (both on the northwest coast of occupied France) have been rubbed out as main submarine bases. No dog or cat is left in these towns. Nothing but the submarine shelters remain."

Late in September, 1942, 8th Air Force headquarters had been ordered to concentrate on the destruction of U-boat production. Doenitz's statement indicates this concentration was paying dividends.

Only six weeks earlier, the concentrated effort had resulted in the posthumous award of the Nation's 11th Medal of Honor to an Air Force member, Lt. Jack Mathis, while leading a raid on Vegesack, Germany, another of the Axis' struggling U-boat yards. On May 1, 1943, the mission leading to the 12th such award was flown. The recipient of this Medal was the first enlisted man in USAF history to be so decorated—Sgt. Maynard Harrison Smith of Caro, Mich.

The citation which accompanied Sergeant Smith's award, while brief, graphically illustrates the immensity of his accomplishment.

For conspicuous gallantry and intrepidity in action above and beyond the call of duty. The aircraft of which Sergeant Smith was a gunner was subjected to intense enemy anti-aircraft fire and determined fighter airplane attacks while returning from a mission over enemy-occupied continental Europe on 1 May 1943. The airplane was hit several times by anti-aircraft fire and cannon shells of the fighter airplanes, two of the crew were seriously wounded, the aircraft's oxygen system was shot out, and several vital control cables severed when intense fires were ignited simultaneously in the radio compartment and waist sections. The situation became so acute that three of the crew bailed out into the comparative safety of the sea. Sergeant Smith, then on his first combat mission, elected to fight the fire by himself, administered first aid to the tail gunner, manned the waist guns, and fought the intense flames alternately. The escaping oxygen fanned the fire to such intense heat that the ammunition in the radio compartment began to explode, the radio, gun mounts, and camera were melted, and the compartment completely gutted. Sergeant Smith threw the exploding ammunition overboard, fought the fire until all the fire-fighting aids were exhausted, manned the workable guns until the enemy fighters were driven away, further administered first aid to his wounded comrade, and then by wrapping himself in protecting cloth, completely extinguished the fire by hand. This soldier's gallantry in action, undaunted bravery, and loyalty to his aircraft and fellow crew members, without regard for his own

Secretary of War Henry L. Stimson presents Nation's highest award to SSgt. Maynard Smith.

personal safety, is an inspiration to the armed forces of the United States.

A maintenance description of the wounded Boeing B-17F *Flying Fortress* after its return gives ample indication of the extent of the damage. The radio compartment and tail-wheel section were gutted; control cables and oxygen system shot out; one propeller hit; number four nacelle shot off; interphone and ball-turret controls out of action; top-turret gun out; tail-wheel gear damaged; flaps ruptured by cannon shell; radio system completely destroyed; gas tank in left wing burned out; nose shattered by flak; nine holes from 20 mm. cannon shells in waist section; and the entire ship riddled by .30 calibre bullets.

Probably no one in the history of aerial combat has ever flown quite so spectacular a first mission as Smith's. He was one of hundreds of replacements which had begun to filter in to the ranks of veteran combat organizations during mid-1943. In fact, he was the lone "rookie" among an otherwise veteran crew on this Saint-Nazaire mission.

Its veteran pilot, Lt. Lewis Johnson, filed an affidavit after the mission citing Smith's contribution to the safety of the crew members who remained with the plane, and concluded with ". . . acts which, by the will of God only, did not cost him his life, performed in complete self-sacrifice and with the utmost efficiency, were solely responsible for the safe return of the airplane, the life of the tail gunner, and lives of everyone else aboard."

So devastating was the damage to the *Fortress* and so trying the mission that the flight surgeon grounded all survivors until he could determine the extent of personal fatigue suffered by each man. All the veteran members of the crew, which included everyone but Smith, were finally returned to the United States to fill instructor positions in the training of additional combat replacements. Smith was requested by another crew and, as this group had earned a 10-day vacation, he was allowed to accompany them to the rest area.

In reality, Sergeant Smith was a rarity among crewmen. Far above the average age of combat fliers, he had already passed his 32d birthday. In his hometown of Caro, Mich., the 130-pound terror of the skies had been an accountant, a far-cry from aerial gunnery, and little in his background would suggest combat success on a scale which would gain him this Nation's highest honor.

Within weeks he was back in the air to finish out his required tour. Early in July, the 1st Bombardment Wing commander received word that the recommendation for the Medal of Honor had been approved. The following day, Secretary of War Henry L. Stimson, on a tour of American bases in England, was scheduled to inspect the organization. He was contacted immediately and asked if he would present the Medal to Sergeant Smith. Without hesitation, Secretary Stimson indicated he would be more than honored.

narrative very factual. This is a story that can stand retelling on a larger scale.

SSgt. Robert Rankin
APO 81, New York, N. Y.

★ ★ ★

LUKE AGAIN

Sir: *As a final item in a long series of letters on Lt. Frank Luke, I thought you might be interested in the enclosed picture (see cut). This monument to the memory of the World War I ace was dedicated in simple ceremonies last September 28, one day short of the 40th anniversary of Lieutenant Luke's death. It was erected near Murvaux, the town where he died, and was presented by the 388th Fighter-Bomber Wing, formerly stationed at Etain AB, a short distance away.*

MSgt. Harold Seward
APO 87, New York, N. Y.

★ ★ ★

PAT ON THE BACK

Sir: *First, allow me to extend my congratulations to the staff of* THE AIRMAN *for a job well done. The magazine is most interesting and extremely well written. Then, let me also add my thanks to Mr. and Mrs. Leighton Templeton, authors of the fine letter which appeared on page seven of the March edition.*

A/1C Morgan Lovvorn
Homestead AFB, Fla.

★ ★ ★

PROPER CREDIT

Sir: *I have just completed your article,* Assistance Unlimited, *in the March issue of* THE AIRMAN, *and I'm afraid credit was not given to the proper base for the origination of the Dependent's Assistance Program. Long before 8th Air Force tested and submitted its program in 1953, Castle AFB, Calif., had a successful program in operation thanks to the combined efforts and supervision of Maj. Philip Mahar and MSgt. Nicholas Gonzales.*

Name Withheld

Mr. Karten, author of the article, had no intention of slighting anyone in crediting the development of the excellent Dependent's Assistance Program. As a matter of fact, several bases had successful programs in operation long before the 8th Air Force tested and submitted its program, as was noted in the story. However, there was little uniformity in the several programs, and the testing effort was designed to provide that uniform approach. We are more than happy to acknowledge the role of the two men mentioned in your letter.

★ ★ ★

APTs

Sir: *I obtained my 7-level AFSC on direct conversion from my Army MOS upon enlistment in the Air Force approximately six months ago. I have never taken an Airman Proficiency Test. Under the provisions of the new Quality Control Program, will I be expected to take such an examination?*

SSgt. Chester Marty
Panama City, Fla.

According to the provisions of the program, no one is exempt from proficiency testing. You, as well as everyone else who does not possess a valid APT score, will be required to take such a test, consistent with your grade level.

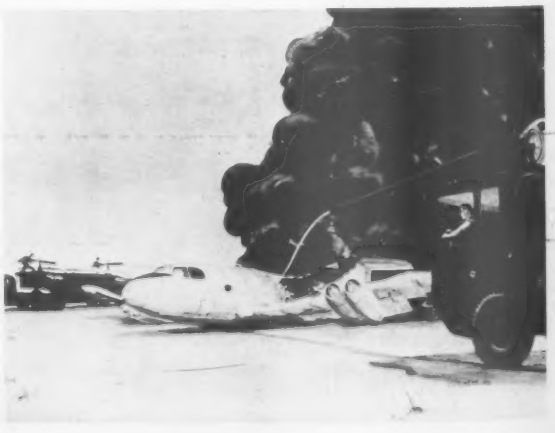
★ ★ ★

C-WHAT?

Sir: *Can you identify the aircraft in the illustration which accompanied the article* How Many CCs? *in* Airman's World *of the March '59 issue of* THE AIRMAN?

A/3C L. F. Mills
Bergstrom AFB, Tex.

The aircraft is an artist's conception and deliberately avoids pinpointing a specific type of aircraft. This is a favorite trick of illustrators. Showing an identifiable type of plane in a crash scene, such as that depicted in this illustration, could bring justifiable howls of anguish from the company manufacturing the aircraft.



These Confusing Space Terms!

Main character and fall guy: A scientist heading an expedition in the Canadian subarctic for high altitude, balloon study of celestial radiation phenomena. Time: Pre-artificial satellite era.

His camp was near an outpost community which boasted of a military station and a fair sized hospital for the care of frontier settlers and Eskimos.

With a routine of a movie a week and a Saturday night social, entertainment fare for military and medical staffs was not exactly varied. This limited program was occasionally expanded by inviting noted visitors to give informal lectures or talks to the duty-captive audience.

Thus the customary invitation was extended to our scientist. For a subject he chose his professional specialty—the mysterious cosmic rays which constantly bombard the earth.

Came lecture night and the base theatre was packed. The big surprise for the speaker—who had expected to address only a few scientists and some technicians—was the large number of officers' wives and hospital nurses in the audience.

He did his best to simplify a tough subject, and although the women seemed especially attentive, they conveyed the impression that what interested them most was something he hadn't yet covered.

Concluding to a burst of courteous applause, the scientist left the stage, pleased on how rapt he had kept his female listeners.

He was promptly deflated however, by a Canadian aide who met him in the wings:

"No one quite knows how it started, but evidently some of the girls had the idea that cosmic rays have some connection with cosmetics. You must have disappointed a lot of the audience."

Oddly enough the two words stem from a common ancestry—the ancient Greek "kosmos," meaning order or ornament, and later used to describe our universe because of the observable harmony of its motion and organization.

Where in the World Have You Been?

A quiz for those who think they have been around in the Air Force. If you can answer the following 12 questions pertaining to Air Force life correctly, the chances are you are on the last lap of the long road to retirement. Six correct answers indicate that you qualify as a career man; four correct or fewer, you are still a recruit.

1. On what Air Force base would you expect to find the Shellbank Area?

2. Can you name the famous island in the Mediterranean—known as the Italian Gibraltar—which surrendered to the Allies on June 11, 1943, as the result of attack by airpower exclusively?

3. The Secretaries of the Army, Navy, and Air Force arrive on a visit to your base at the same time. Who outranks whom as to honors and ceremonies?

4. Near what air base is the John K. Cannon Guest Hotel located?

5. In an earlier page of American history, the President of the United States would be accorded a 21-gun salute, but a member of the cabinet only 19. Since the Air Force does not use ceremonial cannon, how is this distinction in rank recognized?

6. Which base bears the name of a physicist who was awarded the Nobel Prize in 1944 for splitting the uranium atom and whose work made possible the development of atomic power for weapons and peaceful industry?

7. Where is Splinter City?

8. How many nations comprise the NATO partnership?

9. In rendering the hand salute, does one honor the man or his uniform?

10. Who was General Douhet?

11. Prior to the adoption of Air Force Blue in 1948, uniforms were OD, or khaki. Why was that unlovely color chosen to begin with?

12. What does the abbreviation MAAG mean?

ANSWERS

1. Langley Air Force Base, Virginia. 2. Pantelleria, which had to be subdued to clear the way for the invasion of Sicily. 3. In such a situation the Secretaries will take precedence in accordance with their dates of appointment. 4. The John K. Cannon Hotel is a nonappropriated fund guest facility serving important visitors to the Ramstein/Landstuhl base complex in Germany. 5. This distinction is recognized by the number of airmen comprising the honor guard. The President's guard will number 21 men and the cabinet member's 19. 6. Hahn Air Base in West Germany. 7. Wright-Patterson Air Force Base, Ohio. 8. Fifteen. 9. Neither. He is entitled to be thus honored by virtue of his commissioned rank. 10. Guilio Douhet was an Italian military theorist who predicted the decisive capability of strategic airpower in a booklet published in 1923. His thinking influenced—but did not dominate—the evolution of airpower doctrine in the RAF and the USAF. 11. The color OD or khaki was borrowed from the British who found the inconspicuous color helpful at camouflage for the troops in the guerilla phase of the Boer War in South Africa, 1899-1902. 12. Military Assistance Advisory Group.

AIR FORCE CAPABILITIES

General Thomas D. White's Presentation to the Committee on Appropriations, U. S. Senate

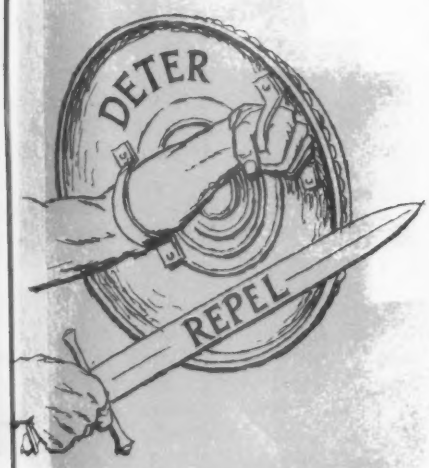
MR. CHAIRMAN AND MEMBERS OF THE COMMITTEE: I am honored to have this opportunity to appear before your committee once again.

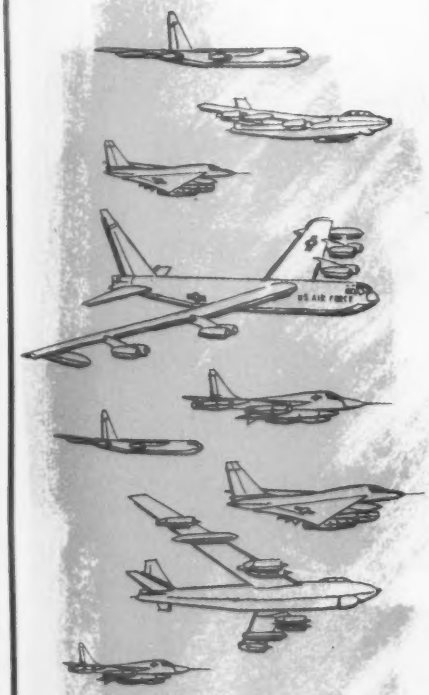
Since Secretary Douglas has already covered the appropriation requests for Fiscal Year 1960 in some detail, I will confine my presentation to an evaluation of present Air Force capabilities and a discussion of the major premises leading to the force structure we consider essential for the foreseeable future.

The President has stated that "Americans are determined to maintain our ability to deter war and to repel and decisively counter any possible attack." Today the military capacity to accomplish these pressing tasks is contained primarily within our strong national airpower. In the 1960s, it must be based upon the existence of strong aerospace power as represented by ballistic missiles, piloted and unpiloted air-breathing vehicles, spacecraft and satellites. This can be achieved only with the help of an active national scientific and industrial technology.

The Threat

The threat the Free World faces today is a *total* threat. It comprises many-sided and carefully managed Communist Bloc political ventures, a dynamic program of economic infiltration and—most dangerous of all—the challenge of Soviet Russia to Free World leadership in air and space. The most serious and immediate *military* threat to the Free World has been and continues to be—strong Soviet airpower. The Soviets have maintained and modernized large ground forces and have made significant progress in building up their Naval forces, particularly submarines. But most significant is their successful concentration on the development of airpower capabilities. They now possess a formidable bomber force, ballistic missiles, nuclear weapons, and a modern air defense system. Soviet emphasis on air and space power is expected to continue.





On the other hand, the existence of strong United States airpower has contributed substantially to the maintenance of peace and to the international prestige and influence of this Nation. Just as Soviet airpower is our chief threat, United States airpower has proved to be the dominant military deterrent to Soviet aggression. As air power evolves into aerospace power, I feel that it will continue to be the decisive factor in maintaining peace—provided we keep it strong. Should war occur, areospace power will play the dominant role.

Of immediate concern to all of us, is the capability of our forces *today*. Next, we are concerned as to what our forces will be able to do in the critical years ahead. Maintaining an effective deterrent posture has certainly not been an easy task in the past. The compression of time, distance and the almost unlimited destructive power of modern weapon systems will unquestionably make our job increasingly difficult in the future.

Deterrence

Before I discuss the Air Force's current capabilities and what we must be able to do in the future, I want to comment briefly on what we consider an "effective deterrent posture." Referring back to the President's statement, it is important to note that two distinct thoughts are expressed —one being "to deter," and the other "to repel and decisively couner any possible attack." But these two objectives are inseparable. Each is dependent upon the other, and both make up the whole. It is obvious then that deterrence alone is not, and was never intended to be, our sole means of national defense.

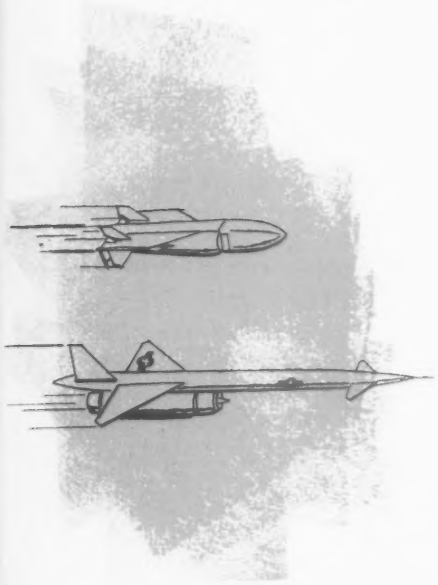
For one thing, we all know that there can be no such thing as an absolute and infallible deterrent. What might serve to deter one nation, will not deter another. An effective deterrent today may not serve tomorrow. Many factors bear upon the decision of a nation to take the final step which will inevitably lead to war, and it would be foolhardy for any one nation to assume an absolute ability to deter another from taking this step.

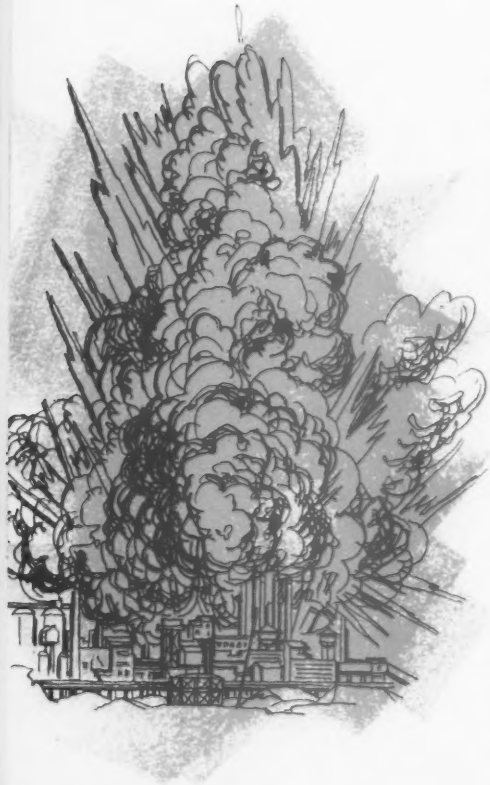
Thus, the deterrent posture which this Nation must maintain requires the possession of substantial secure forces in-being with the capacity to prevail over an enemy should war occur. Furthermore, there must be manifest national determination to use these forces if required. If these forces and our determination are credible in the eyes of an opponent, we will possess an "effective deterrent posture."

Strategic Capabilities

Now, let's take a look at the capabilities of the Air Force and its role in maintaining the "effective deterrent posture" which this country requires. Generally speaking the best defense is a good offense. The true measure of a successful offense in aerospace warfare is the ability to attack the heart of an enemy's military strength. This requires versatile striking power which can—selectively and decisively—destroy his military forces and war making capacity. To do this, we must have sufficient range; we must be able to penetrate enemy defenses; and once we have penetrated we must be able to attack accurately with the proper amount of firepower. Today, our forces have this capability. The forces under development for tomorrow are being designed with the same objective in mind.

Looking at the manned systems first, the new B-52Gs now entering operational units provide us with increased range capabilities. Our growing jet tanker fleet further improves the range and flexibility of our bomber force. Additional operational versatility will be provided as B-52Hs and the supersonic B-58 enter the combat inventory. In the





more distant future, our long-range manned bomber capability will be further improved through the use of the supersonic B-70.

The ability of our manned bombers to penetrate enemy defenses is continually being expanded. Successful penetration can be accomplished today by employing a wide range of operational tactics, including high and low altitude penetrations from all directions around the enemy periphery, and through the use of electronic countermeasures to jam his radars and air defense weapons. In the near future, penetration capabilities will be further improved through the use of *Quail* air-launched decoys to confuse the defenses and through employment of *Hound Dog* supersonic air-to-surface missiles to be launched hundreds of miles from the target. Both of these weapons will seriously degrade the effectiveness of enemy point defenses.

The *Quail* has undergone several successful tests. The *Hound Dog* recently completed its first successful live air launch on the Atlantic Missile Range. A follow on to the *Hound Dog*, an airborne ballistic missile, is already in development.

Now a word about accuracy. Navigation and bombing accuracy have always assumed the highest order of priority in the Air Force. A low degree of accuracy requires more weapons, or weapons of larger yield, to do the same job. Consequently, our bomber crews are subject to constant evaluation of their navigation and bombing proficiency, and target assignments are made only when a crew is fully qualified. Furthermore, our weapons are designed for every type of target. I have the utmost confidence that our bomber crews, their weapons, and the substantial effort that has gone into target analysis provide us with the necessary means to get the job done.

Secretary Douglas has already discussed Air Force development efforts and progress in the field of ballistic missiles. I want to emphasize, however, that the range, reliability and accuracy we have attained in our tests thus far, indicate that we are making great strides toward obtaining effective ballistic missile systems. As far as accuracy is concerned, it is particularly gratifying that our long-range ballistic missile test firings, employing full guidance control, have demonstrated accuracy well within design specifications—in point of time, far beyond our original hopes.

The integration of ballistic missiles into our combat inventory will have a significant impact upon the penetration and survival capabilities of our strategic forces. There is no known defense—at least for the next few years—against ballistic missiles. Within the limits of missile reliability, those which are successfully launched will reach their targets. Thus, missiles will be able to serve a double purpose when used in conjunction with our bombers. Strikes by our manned bombers would be preceded by missile impacts on enemy targets. The resulting destruction and confusion should reduce enemy defense capabilities and thus assure that a higher percentage of our bomber force achieves its objectives. As the accuracy, reliability, and warhead yield of missiles improve, we look forward to their becoming a major portion of our strategic force. However, mixed forces—missiles and manned vehicles—are needed to provide optimum flexibility.

Measures to Protect Our Forces

We are faced with the increasing possibility of a massive surprise attack against our own strategic forces. We must, therefore, take all possible means to protect these forces to assure an enemy's complete devastation even after a surprise attack against us. We are taking positive steps to protect our forces through: better warning, a higher state of alert, wider dispersal, hardening and improved air defense weapons.

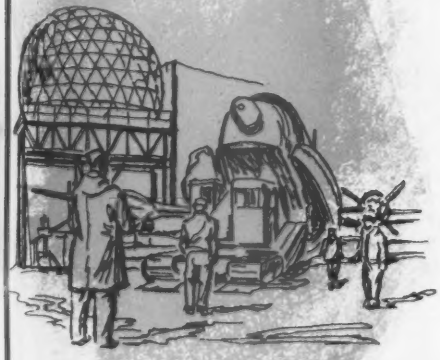
The most critical of these factors is warning—warning so that we can react—not only defensively but offensively. Our warning network against manned jet aircraft and air-breathing missiles is practically

complete. The main portion of our Distant Early Warning (DEW) line which runs across the northern fringe of the North American continent, was completed some time ago. The western extension to this line is complete and the eastern extension is under construction. The eastern extension will join with the NATO system. The western extension will continue from the Aleutians to Midway Island through use of picket ships and airborne early warning and control aircraft. Backing up the DEW line are the Mid-Canada line and the Pine Tree line. Other North American radars, picket ships, airborne early warning and control aircraft and Texas Towers complete this system.

The advent of ballistic missiles makes our warning and defense problems more complex. As Secretary Douglas mentioned earlier, three Ballistic Missile Early Warning Sites (BMEWS) are programmed—one of which is under construction.

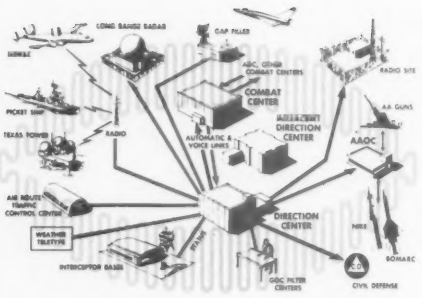
We are countering the problem of reduced warning, which results from the ICBM threat, by maintaining a higher degree of alert for our strategic forces. Sizable numbers of our total forces are now on alert and could be off the ground and on the way to their targets within 15 minutes of initial warning. The size of this alert force is increasing as improved alert facilities and dispersal bases become available. We also have the capacity to maintain a significant portion of our strategic forces on airborne alert, should it become necessary. This type of alert is made possible through employment of air-refueling operations and carefully scheduled flight routes which permit airborne strike aircraft to be diverted to their targets. Airborne alert measures will be employed if the ICBM threat against us becomes substantial prior to the time an effective ballistic missile warning system is available. These forces would be invulnerable to surprise ballistic missile attack and capable of immediate retaliation. Development of longer range air-launched missiles in conjunction with aircraft possessing increased endurance would give us an even greater capacity for this type of alert.

The bomber dispersal program now underway will afford our forces additional security. You may recall that our goal for this program is to disperse our strategic bombers so that not more than one B-52 squadron, with its associated tankers, nor more than one B-47/B-58 wing, with its associated tankers, is located on a single base. Dispersal in this manner affords us the added bonus of being able to launch more aircraft faster in case of surprise attack.



Hardening—that is, the construction of shelters to protect our alert forces—is still another means of providing protection to our combat forces. ICBM systems are particularly adaptable to hardening, and we are incorporating this feature in our programs as fast as practicable. However, to insure the earliest possible ICBM operational capability, our initial sites are not being hardened. All later missile sites will be in a hardened configuration. Here, I want to mention the fact that we plan to incorporate mobility into a portion of our newer missile systems. This concept looks particularly feasible in the case of the *Minuteman.*

Another measure of security is our active air defense. Upon receipt of notice of an incoming bomber attack, our defensive forces will react immediately—to destroy enemy attackers as far from their targets on this continent as possible. Such defensive tactics are imperative. *First,* hitting an enemy as far out as possible will provide more time and the opportunity to destroy his forces while they are still distant from their targets—in effect, he will be denied a "free ride" to his target. *Second,* the advent of long-range air-launched missiles makes it mandatory that we destroy enemy aircraft before they reach missile launching range. *Third,* forward defensive measures will force an enemy to conduct his aerial refueling operations further back toward his own territory thus denying him the full range capability of his bombers. *Fourth,* heavy attrition in the forward areas will decrease an enemy's chances of saturating a target, thereby improving the kill probability of our inner

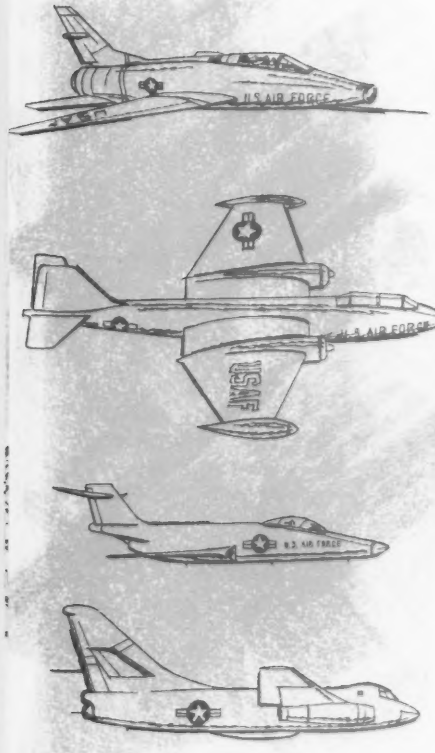


defenses. It is for these reasons that the Air Force wants to employ interceptors—both manned and unmanned—which can strike at long distances from their bases. Today's capability to perform this task exists in our manned interceptor force armed with rockets and air-to-air missiles—some with nuclear warheads. The long-range *Bomarc* surface-to-air missile is in production and the far ranging F-108 interceptor is under development. These two weapon systems will enable us to do the job better.

Within minutes of warning, substantial numbers of our strike aircraft also will be on their way. Naturally, this situation will require close correlation and precise identification of all forces—to avoid confusion, to afford protection to our own forces, and to assure maximum destruction of attacking forces. This will be a complicated task. To minimize the number of slower manual operations and thus achieve greater efficiency, the Semi-automatic Ground Environment (SAGE) system was developed. Secretary Douglas has cited the progress in this system. I would like to add, however, that the new developments in transistors and miniaturization have opened the door to hardening the control centers—a great step forward in achieving greater security.

Tactical Air Forces

Thus far, I have discussed the air defense and strategic offensive capabilities of the Air Force in their general war roles, and with respect to a surprise attack against us. Additional and substantial strength is contained in the Tactical Air Command and the overseas tactical air forces. Units of our tactical air forces deployed overseas are also assigned a general war mission. Furthermore, they can, if necessary, be used in lesser conflicts. F-100 and F-101 tactical fighters, B-57 and B-66 tactical bombers and *Matador* surface-to-surface missiles are dispersed throughout the overseas theaters. They are poised in an "around-the-clock" readiness and prepared to strike their predesignated targets on a moment's notice.



A highly versatile and combat-ready element of our tactical forces is the Tactical Air Command's Composite Air Strike Force. This organization is based in the United States, immediately on call to support the unified commanders throughout the world. It can be tailored in size and composition to meet any particular situation where a show of force, an application of force, or a general war augmentation is required. These units are ready for immediate deployment. Their particular qualifications for use in limited war lie in their mobility, flexibility and striking power. Furthermore, they possess the important advantage of providing us with a force which can be employed, in whole or in part, without upsetting or degrading the general war posture of our strategic and theater forces.

Units of the Air National Guard and the Air Force Reserve furnish additional valuable elements of our tactical air strength. All of these forces, plus the strengths of the Army, Navy and Marines and our allies, comprise formidable power which, in my opinion, is generally underestimated when our limited war capabilities are analyzed.

Some concern has been expressed that Air Force capabilities have been weakened by the reduction in combat wing structure from 137 in Fiscal Year 1957 to the 102 now programmed for the end of Fiscal Year 1960. However, this reduction does not reflect the upgrading in both capability and quality which is continually being achieved. Furthermore, as missiles enter our combat inventory in greater numbers, both our offensive and defensive postures will improve substantially.

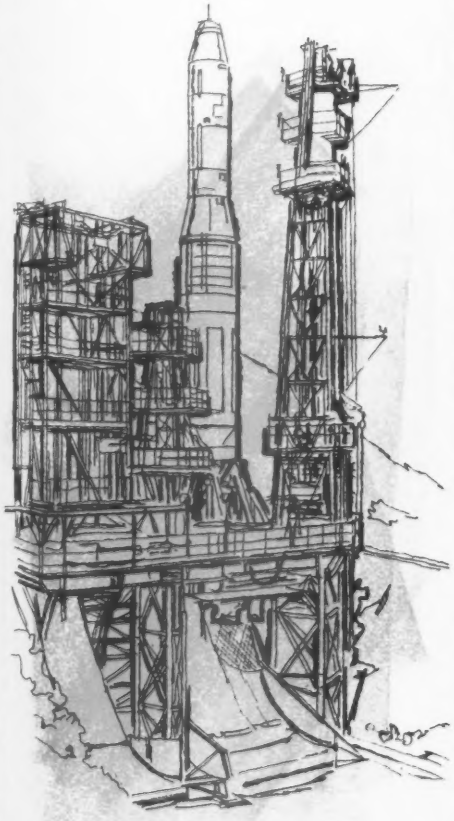
Airlift Capabilities

Our military airlift requirements are determined substantially by the D-Day military airlift requirement plus the continuing wartime require-

ments that have to be met. Although a substantial airlift augmentation will be provided by the Civil Reserve Air Fleet during wartime—in fact, we would not be able to accomplish our objectives without this contribution—there are two compelling reasons for the maintenance of a military airlift capability in-being. *First,* airlift must be immediately available when needed. *Second,* we must have airlift to accommodate unique, outsized cargo. The Military Air Transport Service, the troop carrier aircraft of the Tactical Air Command and the transport aircraft of our Reserve Forces are, therefore, vital elements of our total combat strength.

The Future

I believe we have made substantial progress this past year towards the development of our aerospace force of the future. Our current ballistic missiles and programmed unmanned satellites certainly can be classed as aerospace vehicles. Our manned systems, too, are operating at speeds and altitudes which were considered phenomenal only a few short years ago. For example, the F-104 has attained altitudes of 91,000 feet and speeds exceeding 1,400 miles per hour. This aircraft is now operational in both the Air Defense Command and the Tactical Air Command. In the experimental field, the X-2 rocket aircraft has been piloted to altitudes in excess of 126,000 feet and speeds exceeding 2,000 miles per hour. The X-15, a more advanced rocket aerospace craft, will shortly make its first flight. We anticipate that this vehicle will eventually attain altitudes in excess of 100 miles and speeds of over 3,600 miles per hour. The Dyna-Soar—a boost-glide aerospace vehicle—is being developed initially as a prototype test system for manned exploration of the flight regions beyond the capabilities of the X-15. It will take man to near orbital velocities and altitudes. This vehicle will be an important "laboratory" for obtaining information needed for the later development of manned military weapon systems and satellites. Improved aerospace vehicles, both piloted and unpiloted, can be expected to follow.



I am convinced that our future in aerospace will see man operating in this new environment as effectively as he is in present day operations. The remarkable ability of remote instrumentation to obtain information from space has already been demonstrated in recent satellite and lunar probe projects. Additional advances in such techniques will certainly be forthcoming. However, even the most sophisticated of our new instruments cannot replace the on-the-spot judgment and selectivity of the human being. Man must operate in the far reaches of aerospace—employing his logic, his common sense and his good judgment to conquer the unexpected and the unknown. Furthermore, should we ever be called upon to conduct military operations in this medium, man's presence and ability might well mean the difference between defeat and victory.

Personnel

I am happy to report today that in addition to improved operational facilities and equipment, we also possess more highly skilled personnel. This is due, in a large part, to the successful results of the military career incentive legislation which was enacted last year. However, there is still more to be done in this area if we are to obtain and retain the quality personnel we need. The provision of adequate personnel facilities, including family housing—although improving gradually—continues to be a major concern—one that bears directly upon the retention of our officers and airmen. This subject will be treated in greater detail during the hearings on the Air Force military construction program.

This concludes my summary of Air Force capabilities. They are substantial. In conjunction with those of our Army, our Navy and Marine Corps *and* our allies, they comprise formidable power in defense of the Free World.

BASELINE USAF

RECRUITER FETED

McCoy AFB, Fla.--MSgt. Walter Chambers, who recently completed an assignment as USAF recruiter in this area, was honored on a special television program just prior to his reassignment.

Hosted by Mayor Hart Long of nearby Daytona Beach, Sergeant Chambers was presented with the Gold Key to the city and the Chamber of Commerce Outstanding Citizen Award for his contributions to the welfare and growth of the community.

Chambers is presently assigned to the 321st Bombardment Wing at this station.

PAPAL DECORATION

Hq, NATO South, Naples, Italy--Capt. Vincent G. Savino, assigned to the local headquarters of Allied Forces, Southern Europe, was recently awarded the medal of a Knight of the Order of St. Sylvester by Pope John XXIII.

The presentation was made by Navy Chaplain (LCMD) John P. Fay in recognition of Captain Savino's "outstanding contribution to Catholic life, youth, and community programs in promoting harmony between NATO forces and the Italian public."

The Order of St. Sylvester was founded by Pope Gregory XVI in 1841. Appointment as a Knight of the Order is conferred only as a personal papal decoration.

FRIENDSHIP

Otis AFB, Mass.--Members of the 962d Airborne Early Warning and Control Squadron recently struck a mighty blow for better community relations in the local area.

Early this spring, fire in the nearby community of Forestdale completely destroyed the home and possessions of Mr. Raymond Govone and seriously burned the owner.

When Govone's plight became known to local airmen, they asked Col. R. W. Davania, base commander, to allow them to utilize a small cottage, already programmed for destruction in the base modernization program, to replace the Govone home.

Given the green light, 962d's airmen pitched in to raze the charred remains, pay for the cottage's transport by a private contractor, and paint and renovate it inside and out.

EDUCATIONAL ACHIEVEMENT

Yamato Air Station, Japan--An ambitious young airman, who three years ago spoke only a few halting words of English, is today the talk of educational circles in this military community.

A/2C Jurgen Miller came to the United States from Germany in 1955, joined USAF shortly thereafter, and was shipped to Japan within a few months. Eighteen months ago, he enrolled in the University of Maryland Overseas Program. Since then, he has completed 57 semester hours of A-average work, the equivalent of nearly two years full-time study, in addition to successfully performing his assigned duties as a surveyor.

Peace depends upon deterrent strength.

Now, as in the past, the elements of deterrence are:

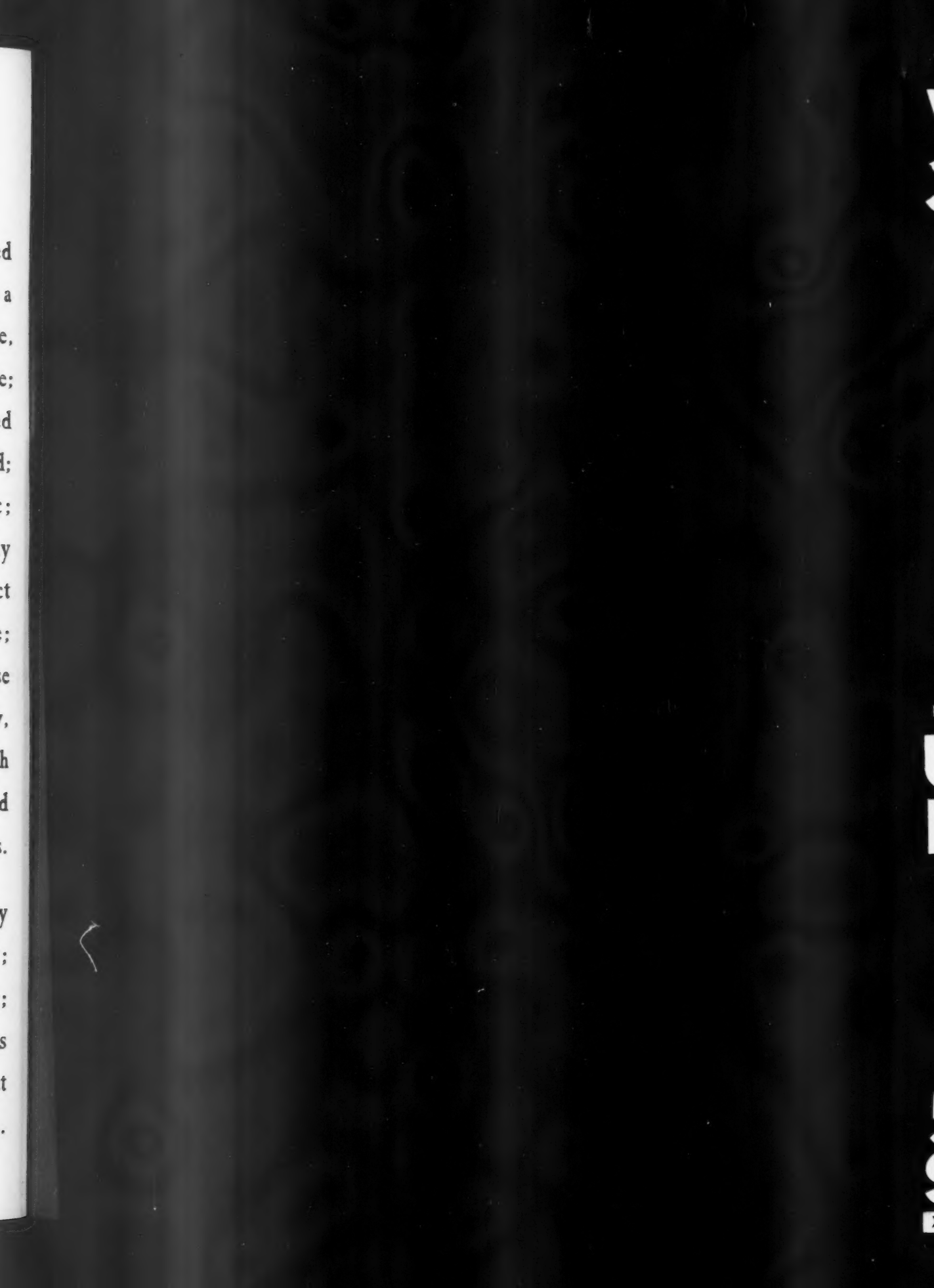
will and determination to use force

adequate force ready and available for immediate, decisive action

knowledge by an aggressor that force will be used—*rapidly and effectively*

Written by William Tyler Page, a clerk of the House of Representatives in 1917.
It was adopted and promulgated by the Government's Committee on Publication and accepted on behalf of the American people on April 3, 1918.

The American Creed

I believe in the United States of America as a Government of the people, by the people, for the people; whose just powers are derived from the consent of the governed; a democracy in a republic; a sovereign Nation of many sovereign States; a perfect Union, one and inseparable; established upon those principles of freedom, equality, justice, and humanity for which American patriots sacrificed their lives and fortunes.

I therefore believe it is my duty to my country to love it; to support its Constitution; to obey its laws; to respect its flag; and to defend it against all enemies.